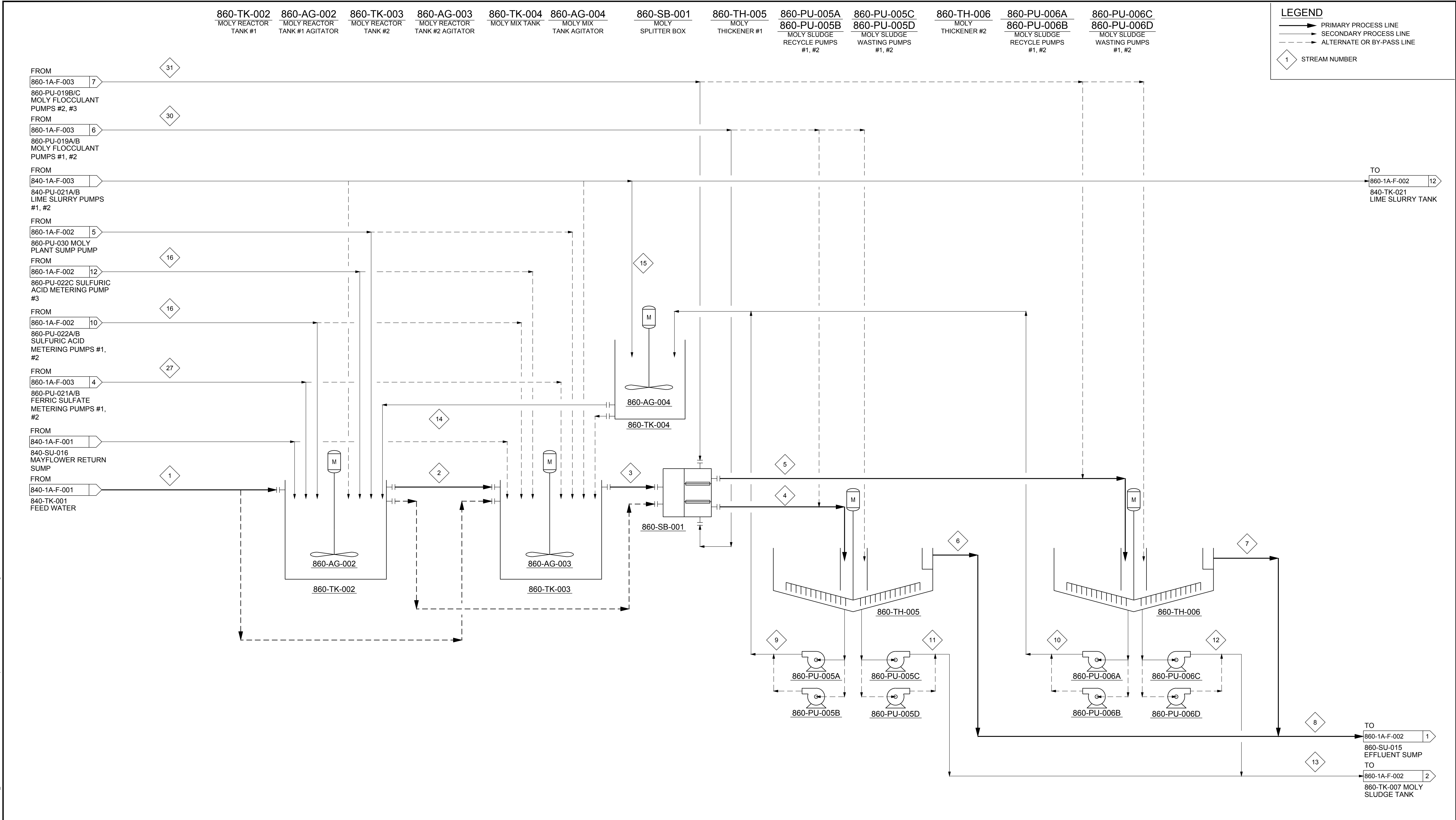


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0	2022-04-05	ISSUED FOR CONSTRUCTION	JCS	EPB	CAB	EPB
REV.	YYYY-MM-DD	DESCRIPTION	PREPARED	DESIGNED	REVIEWED	APPROVED

SEAL



CLIENT



CLIMAX, COLORADO
FREMONT PASS

CONSULTANT



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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

PROCESS FLOW DIAGRAM
SHEET 1

PROJECT NO.
1912808404

REV.

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of

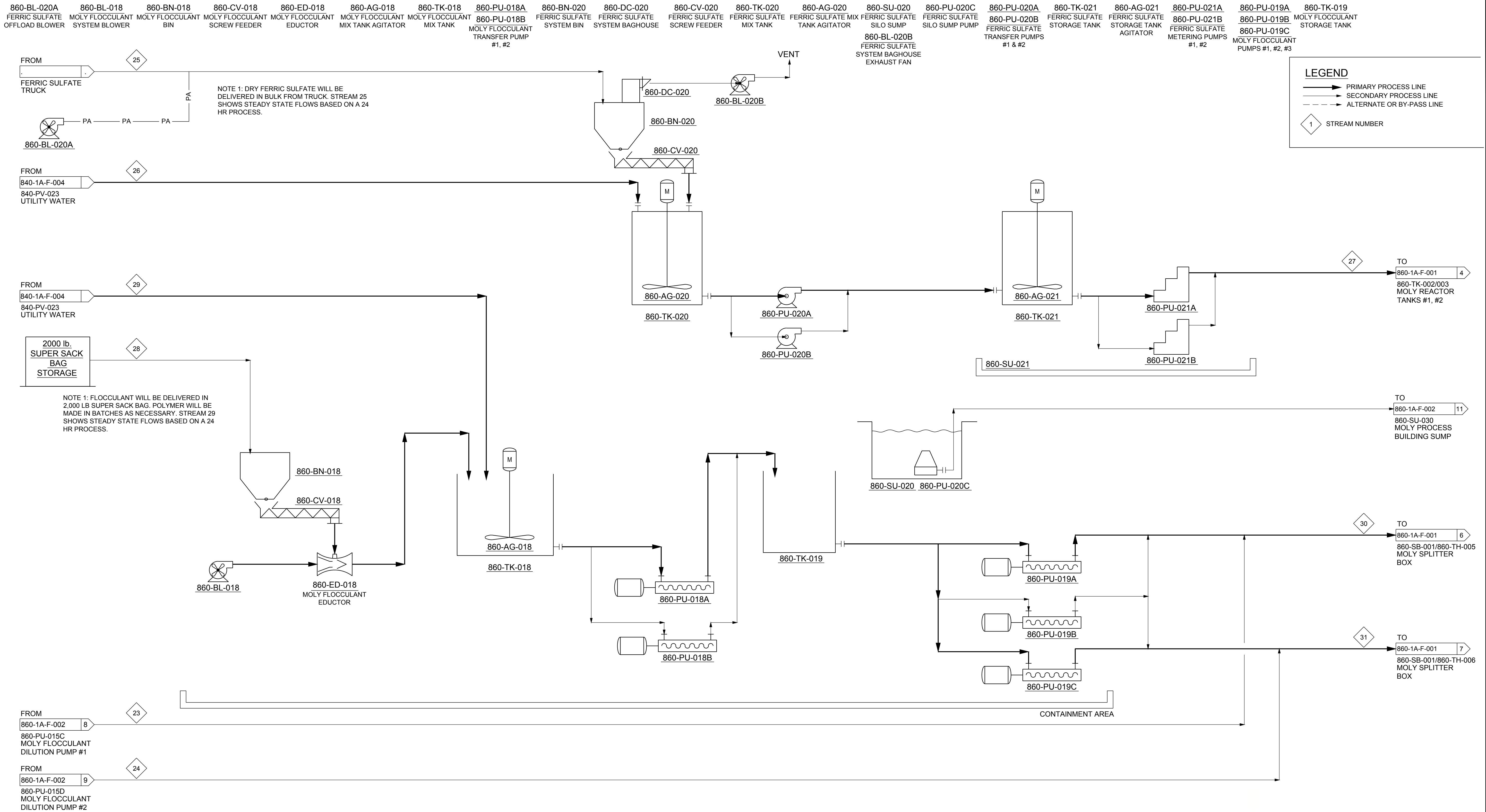
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DRAWING

860-1A-F-001

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0	2022-04-05	ISSUED FOR CONSTRUCTION	JCS	EPB	CAB	EPB
REV.	YYYY-MM-DD	DESCRIPTION	PREPARED	DESIGNED	REVIEWED	APPROVED

SEAL



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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

PROCESS FLOW DIAGRAM
SHEET 3

PROJECT NO.
1912808404

REV.

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of

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DRAWING

860-1A-F-003

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MASS BALANCE (MAXIMUM) ^{1,2}																
860-1A-F-001																
DESCRIPTION	MOLY FEED WATER	MOLY REACTOR TANK #1	MOLY REACTOR TANK #2	MOLY SPLITTER BOX DISCHARGE #1	MOLY SPLITTER BOX DISCHARGE #2	MOLY THICKENER #1 OVERFLOW	MOLY THICKENER #2 OVERFLOW	COMBINED THICKENER OVERFLOW	MOLY THICKENER #1 SLUDGE RECYCLE	MOLY THICKENER #2 SLUDGE RECYCLE	MOLY THICKENER #1 WASTE SLUDGE (NORMALIZED)	MOLY THICKENER #2 WASTE SLUDGE (NORMALIZED)	COMBINED WASTE SLUDGE (NORMALIZED)	MOLY MIX TANK DISCHARGE	LIME FEED TO MOLY MIX TANK	SULFURIC ACID (93%) ³
NEW STREAM NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
TOTAL FLOW (GPM/SCFM)	14,000	14,416	14,416	7,383	7,383	7,180	7,180	14,360	199	199	4.0	4.0	8.0	407	8.3	0.18
TOTAL MASS (LB/MIN)	116,816	121,248	121,248	62,084	62,084	59,910	59,910	119,818	1,869	1,869	37	37	75	3,811	73	2.8
SPECIFIC GRAVITY	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.13	1.13	1.13	1.13	1.13	1.12	1.05	1.84
WATER FLOW (GPM)	14,000	14,414	14,414	7,382	7,382	7,179	7,179	14,358	168	168	3.4	3.4	6.7	344	7.8	-
SOLIDS MASS FLOW (LB/MIN)	0.0	960	960	480	480	1.2	1.2	2.4	467	467	9.3	9.3	18.7	942	7.26	-
% SOLIDS (W/W)	0%	0.8%	0.8%	0.8%	0.8%	0.002%	0.002%	0.002%	25%	25%	25%	25%	25%	25%	10%	0%

860-1A-F-002					860-1A-F-003						
DESCRIPTION	MOLY PLANT EFFLUENT TO PDWTP	WASTE SLUDGE FROM MOLY SLUDGE TANK	FLOCCULANT DILUTION WATER #1	FLOCCULANT DILUTION WATER #2	BULK GRANULAR FERRIC SULFATE ^{4,5,6}	FERRIC SULFATE MAKEUP WATER ⁴	30% FERRIC SULFATE SOLUTION	DRY FLOCCULANT ⁶	FLOCCULANT MAKEUP WATER	FLOCCULANT POLYMER #1	FLOCCULANT POLYMER #2
NEW STREAM NUMBER	19	22	23	24	25	26	27	28	29	30	31
TOTAL FLOW (GPM/SCFM)	14,080	150	140	140	-	7.0	9.3	-	70	175	175
TOTAL MASS (LB/MIN)	117,482	1,408	1,168	1,168	35.9	58.6	83.7	0.6	584	1,460	1,460
SPECIFIC GRAVITY	1.0	1.13	1.00	1.00	1.12	1.00	1.22	-	1.00	1.00	1.00
WATER FLOW (GPM)	14,078	6.7	140	140	-	7.0	7.0	-	70.0	175	175
SOLIDS MASS FLOW (LB/MIN)	0	8.2	0.0	0.0	35.9	0.0	25.1	0.6	0.0	0.3	0.3
% SOLIDS (W/W)	0%	25%	0%	0%	100%	0%	30%	100%	0%	0.1%	0.1%

- NOTES:
- 1) MAXIMUM CONDITIONS INCLUDE MAXIMUM FLOW RATE, SPECIFIC GRAVITY AND CHEMICAL ADDITIONS FROM THE 10 MG/L MO PILOT SET POINT, LIME DOSE OF 60 MG/L, AND 25% SLUDGE IN THE UNDERFLOW
 - 2) DURING DESIGN FLOW RATE OF 14,000 GPM, REACTOR TANKS OPERATE IN SERIES, WITH CHEMICAL ADDITIONS AND SPENT FILTER BACKWASH FLOW RECYCLE TO REACTOR 1.
 - 3) VALUES SHOWN ARE FOR COMBINED SULFURIC ACID USE, INCLUDING SULFURIC ACID PUMPED BY 860-PU-044A/B AND 860-PU-044C.
 - 4) VALUES SHOWN ARE NORMALIZED CONTINUOUS FLOW. MAKEDOWN IS BATCHWISE AND WHEN A BATCH IS MADE-DOWN THE GRANULAR SOLIDS FLOW AT 250 LB/MIN AND THE UTILITY WATER FLOWS AT 50 GPM.
 - 5) VALUE OF 1.12 SHOWN AS SPECIFIC GRAVITY REFLECTS THE BULK DENSITY OF THE MATERIAL AS SUPPLIED FROM THE MANUFACTURER (FERRIX 3 FROM KEMIRA).
 - 6) THE % SOLIDS SHOWN REFLECTS THE AS SUPPLIED MATERIAL WHICH MAY HAVE SOME WATERS OF HYDRATION. WATERS OF HYDRATION ARE CONSIDERED IN THE DOSE OF SPECIFIC IONS SUCH AS IRON BUT NOT WHEN SPECIFYING THE WEIGHT AND REQUIREMENTS OF "AS SUPPLIED" PRODUCTS.

MASS BALANCE (AVERAGE) ¹																
860-1A-F-001																
DESCRIPTION	MOLY FEED WATER	MOLY REACTOR TANK #1	MOLY REACTOR TANK #2	MOLY SPLITTER BOX DISCHARGE #1	MOLY SPLITTER BOX DISCHARGE #2	MOLY THICKENER #1 OVERFLOW	MOLY THICKENER #2 OVERFLOW	COMBINED THICKENER OVERFLOW	MOLY THICKENER #1 SLUDGE RECYCLE	MOLY THICKENER #2 SLUDGE RECYCLE	MOLY THICKENER #1 WASTE SLUDGE (NORMALIZED)	MOLY THICKENER #2 WASTE SLUDGE (NORMALIZED)	COMBINED WASTE SLUDGE (NORMALIZED)	MOLY MIX TANK DISCHARGE	LIME FEED TO MOLY MIX TANK	SULFURIC ACID (93%) ²
NEW STREAM NUMBER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
TOTAL FLOW (GPM/SCFM)	6,100	6,232	6,232	3,262	3,262	3,196	3,196	6,391	65	65	1.4	1.4	2.7	131	1.2	0.05
TOTAL MASS (LB/MIN)	50,898	52,175	52,175	27,260	27,259	26,666	26,666	53,330	580	580	12	12	23	1,170	10.5	0.8
SPECIFIC GRAVITY	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.07	1.07	1.07	1.07	1.00	1.07	1.05	1.84
WATER FLOW (GPM)	6,100	6,231	6,231	3,255	3,255	3,195	3,195	6,391	59	59	1.2	1.2	2.7	119	1.1	-
SOLIDS MASS FLOW (LB/MIN)	0.0	179	179	95	94	0.5	0.5	1.1	87	87	1.8	1.8	0.0	175	1.05	-
% SOLIDS (W/W)	0%	0.3%	0.3%	0.3%	0.3%	0.002%	0.002%	0.002%	15%	15%	15%	15%	0%	15%	10%	0%

860-1A-F-002					860-1A-F-003						
DESCRIPTION	MOLY PLANT EFFLUENT TO PDWTP	WASTE SLUDGE FROM MOLY SLUDGE TANK	FLOCCULANT DILUTION WATER #1	FLOCCULANT DILUTION WATER #2	BULK GRANULAR FERRIC SULFATE ^{3,4,5}	FERRIC SULFATE MAKEUP WATER ³	30% FERRIC SULFATE SOLUTION	DRY FLOCCULANT ⁵	FLOCCULANT MAKEUP WATER	FLOCCULANT POLYMER #1	FLOCCULANT POLYMER #2
NEW STREAM NUMBER	19	22	23	24	25	26	27	28	29	30	31
TOTAL FLOW (GPM/SCFM)	6,111	150	140	140	-	0.5	0.7	-	12	146	146
TOTAL MASS (LB/MIN)	50,994	1,341	1,168	1,168	2.6	4.3	6.1	0.1	102	1,219	1,219
SPECIFIC GRAVITY	1.0	1.07	1.00	1.00	1.12	1.00	1.22	-	1.00	1.00	1.00
WATER FLOW (GPM)	6,111	2.5	140	140	-	0.5	0.5	-	12.2	146	146
SOLIDS MASS FLOW (LB/MIN)	0	8.2	0.0	0.0	2.6	0.0	2.6	0.1	0.0	0.1	0.1
% SOLIDS (W/W)	0%	15%	0%	0%	100%	0%	30%	100%	0%	0.1%	0.1%

- NOTES:
- 1) AVERAGE CONDITIONS INCLUDE AVERAGE FLOW RATE, SGR AND CHEMICAL ADDITIONS FROM THE 2.5 MG/L MO PILOT SET POINT, LIME DOSE OF 20 MG/L, AND 15% SLUDGE IN THE UNDERFLOW.
 - 2) VALUES SHOWN ARE FOR COMBINED SULFURIC ACID USE, INCLUDING SULFURIC ACID PUMPED BY 860-PU-044A/B AND 860-PU-044C.
 - 3) VALUES SHOWN ARE NORMALIZED CONTINUOUS FLOW. MAKEDOWN IS BATCHWISE AND WHEN A BATCH IS MADE-DOWN THE GRANULAR SOLIDS FLOW AT 250 LB/MIN AND THE UTILITY WATER FLOWS AT 50 GPM
 - 4) VALUE OF 1.12 SHOWN AS SPECIFIC GRAVITY REFLECTS THE BULK DENSITY OF THE MATERIAL AS SUPPLIED FROM THE MANUFACTURER (FERRIX 3 FROM KEMIRA)..
 - 5) THE % SOLIDS SHOWN REFLECTS THE AS SUPPLIED MATERIAL WHICH MAY HAVE SOME WATERS OF HYDRATION. WATERS OF HYDRATION ARE CONSIDERED IN THE DOSE OF SPECIFIC IONS SUCH AS IRON BUT NOT WHEN SPECIFYING THE WEIGHT AND REQUIREMENTS OF "AS SUPPLIED" PRODUCTS.

SEAL



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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

MASS BALANCE

PROJECT NO.
1912808404

REV. of DRAWING
0 of 860-1A-F-004

0 2022-04-05 ISSUED FOR CONSTRUCTION

REV. YYYY-MM-DD DESCRIPTION

JCS EPB CAB EPB

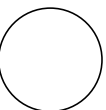
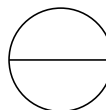
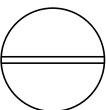
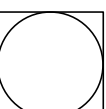
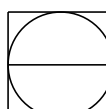
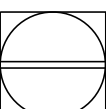
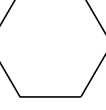
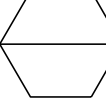
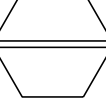
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INSTRUMENTATION SYMBOLS

NORMALLY ACCESSIBLE TO OPERATOR *

FIELD MOUNTED	PRIMARY LOCATION	AUXILIARY LOCATION
		
DISCRETE INSTRUMENTATION	DISCRETE INSTRUMENTATION	DISCRETE INSTRUMENTATION
		
SHARED DISPLAY, SHARED CONTROL	SHARED DISPLAY, SHARED CONTROL	SHARED DISPLAY, SHARED CONTROL
		
COMPUTER FUNCTION	COMPUTER FUNCTION	COMPUTER FUNCTION
		
PROGRAMMABLE LOGIC CONTROL	PROGRAMMABLE LOGIC CONTROL	PROGRAMMABLE LOGIC CONTROL

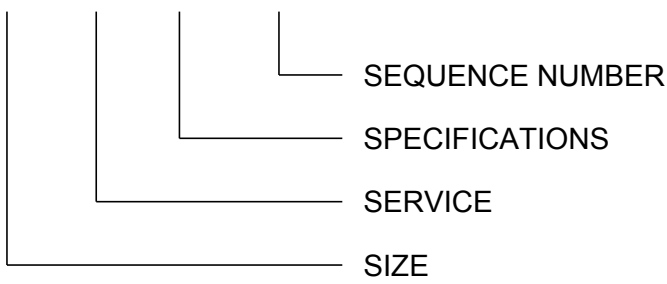
* INACCESSIBLE OR BEHIND THE PANEL DEVICES OR FUNCTIONS DEPICTED BY USING SAME SYMBOLS BUT WITH DASHED HORIZONTAL BAR

IDENTIFICATION LETTERS

	FIRST-LETTER		SUCCEEDING-LETTERS		
	MEASURED OR INITIATING VARIABLE	MODIFIER	READOUT OR PASSIVE FUNCTION	OUTPUT FUNCTION	MODIFIER
A	ANALYSIS		ALARM		
B	BURNER, COMBUSTION		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
C	USER'S CHOICE			CONTROL	
D	USER'S CHOICE	DIFFERENTIAL			
E	VOLTAGE		SENSOR (PRIMARY ELEMENT)		
F	FLOW RATE	RATIO (FRACTION)	GLASS, VIEWING DEVICE	RATIO (FRACTION)	
G	USER'S CHOICE				
H	HAND				HIGH
I	CURRENT (ELECTRICAL)		INDICATE		
J	POWER	SCAN			
K	TIME, TIME SCHEDULE	TIME, RATE OF CHANGE		CONTROL STATION	
L	LEVEL		LIGHT		LOW
M	USER'S CHOICE	MOMENTARY			MIDDLE, INTERMEDIATE
N	USER'S CHOICE		USER'S CHOICE	USER'S CHOICE	USER'S CHOICE
O	USER'S CHOICE		ORIFICE, RESTRICTION		
P	PRESSURE, VACUUM		POINT (TEST) CONNECTION		
Q	QUANTITY	INTEGRATE TOTALIZE			
R	RADIATION		RECORD		
S	SPEED, FREQUENCY	SAFETY		SWITCH	
T	TEMPERATURE			TRANSMIT	
U	MULTIVARIABLE		MULTIFUNCTION	MULTIFUNCTION	MULTIFUNCTION
V	VIBRATION			VALVE, DAMPER LOUVER	
W	WEIGHT, FORCE		WELL		
X	UNCLASSIFIED	X AXIS	UNCLASSIFIED	UNCLASSIFIED	UNCLASSIFIED
Y	EVENT, STATE OR PRESENCE	Y AXIS		RELAY, COMPUTE CONVERT	
Z	POSITION, DIMENSION	Z AXIS		DRIVER, ACTUATOR UNCLASSIFIED FINAL CONTROL ELEMENT	

LINE NUMBER IDENTIFIER

XXX"-XXX-XXX- XXXX



PIPE SERVICE ABBREVIATIONS

ABBV. SERVICE

AF	ANTI FOAM
AG	ALGEACIDE
AL	ALUM
AS	ANTISCALANT
BA	BLOWER AIR
BD	BLOWDOWN
BR	BACKWASH RETURN
BS	BACKWASH SUPPLY
BRS	BRINE SUPPLY
CA	COMPRESSED AIR
CC	CLEANING CHEMICAL
CL	CALCIUM CHLORIDE
COA	COAGULANT
CWR	COOLING TOWER RETURN
CWS	COOLING TOWER SUPPLY
DE	DIATOMACEOUS EARTH
DEC	DECANT
DL	DILUTION WATER
DMW	DEMINERALIZED WATER
DR	DRAIN
DW	DRINKING WATER
ES	ELECTRICAL SUPPLY
EFF	EFFLUENT
FD	DRY SULFURIC SULFATE
FE	FILTER EFFLUENT
FL	FLOCULANT
FP	FIRE PROTECTION
FS	FERRIC SULFATE
FW	FEED WATER
GLR	GLYCOL RETURN
GLS	GLYCOL SUPPLY
HCL	HYDROCHLORIC ACID
HS	HIGH PRESSURE STREAM
HWR	HOT WATER RETURN
HWS	HOT WATER SUPPLY
HYD	HYDROGEN
IA	INSTRUMENT AIR
INF	INFLUENT
LI	LIME
LO	LUBE OIL
LPG	LIQUIFIED PETROLEUM GAS

ABBV. SERVICE

LS	LIME SLURRY
ME	MOLY EFFLUENT
MR	MAYFLOWER RETURN
NG	NATURAL GAS
NIT	NITROGEN
NP	NITROGEN PHOSPHATE
OF	OVERFLOW
OG	OFF GAS
OIL	OIL
OX	OXYGEN
PA	PROCESS AIR
PC	PROCESS CONDENSATE
PER	PERMEATE
PD	PROCESS DRAIN
PLW	PLANT WATER (TREATED)
POL	POLYMER
POT	POTABLE WATER
PW	PROCESS WATER
PWW	PROCESS WASTE WATER
RCW	RECYCLE WATER
RD	REACTOR DISCHARGE
RV	RELIEF VENT
RS	RECYCLED SLUDGE
SA	SULFURIC ACID
SAH	SODA ASH
SB	SODIUM BISULFITE
SC	STEAM CONDENSATE
SD	STORM DRAIN
SEW	SEWER
SH	SODIUM HYDROXIDE
SHP	SODIUM HYDROCHLORIDE
SL	SLUDGE
SS	SANITARY SEWER
STM	STEAM
STS	STORM SEWER
TO	THICKENER OVERFLOW
TW	POTABLE TEMPERED WATER
UW	UTILITY WATER
VT	VENT
WS	WASTE SLUDGE
WW	WELL WATER

PIPE SPECIFICATION DESIGNATION

AC1	CARBON STEEL - CL 150 - .75" - 42"	XP1	HDPE DR 32.5
AC2	CARBON STEEL - CL 150 - .75" - 42"	XP2	HDPE DR 17
AC3	CARBON STEEL - CL 150 - .75" - 12"	XP3	PVC
AC4	CARBON STEEL - CL 150 - .75" - 36"	XP4	CPVC/PVC
AG1	GALVANIZED STEEL - .75" - 4"	XP5	PVDF DR 33
AS1	304L STAINLESS STEEL - .75" - 36"	XP6	HDPE DR 9
AS2	316L STAINLESS STEEL - .75" - 6"		
BC4	CARBON STEEL - CL 300 - .75" - 36"		
TU1	COPPER		

SEAL



CLIENT



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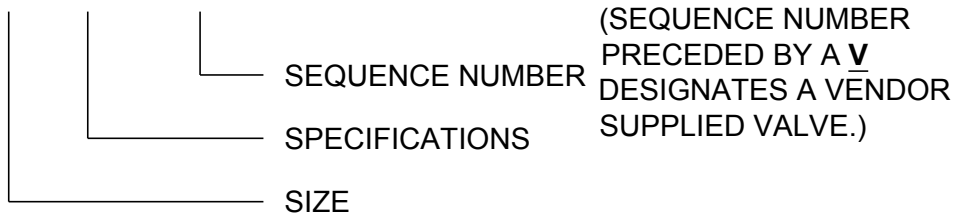
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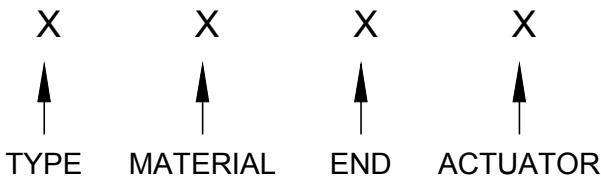
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VALVE NUMBER IDENTIFIER

XX"XXXX-XXX



VALVE SPECIFICATION DESIGNATION



VALVE TYPE:

1. BALL
2. BUTTERFLY
3. GATE
4. KNIFE GATE
5. GLOBE
6. PINCH
7. BALL CHECK
8. SWING CHECK
9. WAFER CHECK
0. PLUG

MATERIAL:

1. PVC
2. STEEL
3. BRONZE
4. STAINLESS STEEL
5. POLYETHYLENE
6. POLYPROPYLENE
7. CPVC
8. PVDF
9. SPECIAL

ENDS:

1. SOCKET
2. THREADED
3. FLANGE - FLAT FACE
4. FLANGE - RAISED FACE
5. WAFER
6. LUG
7. COMPRESSION FERRULE
8. VICTAULIC
9. SW / THD
0. SPECIAL

ACTUATOR:

1. HANDWHEEL
2. LEVER
3. GEAR WITH HANDWHEEL
4. GEAR WITH CHAIN
5. PNEUMATIC
6. ELECTRIC
7. HYDRAULIC
8. SPRING RETURN
9. OPERATING NUT
0. NOT APPLICABLE

GENERAL ABBREVIATIONS

ABBV.

AC	AIR CLOSERS
AO	AIR OPEN
AT	AIR TRAP
AS	AIR SUPPLY
CL	SCALE INHIBITOR
CO	CHAIN OPERATED
DC	DOUBLE CONTAINED
DT	DRAIN TRAP
DW	DEAREATOR WATER
FC	FAIL CLOSE
FD	FLOOR DRAIN
FO	FAIL OPEN
H/T	HEAT TRACE
LC	LOCK CLOSED
LO	LOCK OPENED

ABBV.

MCP	MAIN CONTROL PANEL
NC	NORMALLY CLOSED
NO	NORMALLY OPEN
P/S	PURGE WATER SUPPLY
RTD	RESISTANCE TEMPERATURE DETECTOR
SP	SAMPLE PORT
SV	SAMPLE VALVE (1/2" UNLESS OTHERWISE NOTED)
TC	THERMOCOUPLE
TDS	TOTAL DISSOLVED SOLIDS
TP	TEST PORT
TS	TOTAL SOLIDS
TSS	TOTAL SUSPENDED SOLIDS
W/S	WATER SUPPLY

EQUIPMENT ABBREVIATIONS

ABBV.

AD	AIR DRYER
AG	AGITATOR
AR	AIR RECIEVER
BN	BIN
BH	BAG HOUSE
BL	BLOWER
CC	CYCLONE SEPARATOR
CM	COMPRESSOR
CP	CONTROL PANEL
CT	COOLING TOWER
CV	CONVEYOR
ED	EDUCTOR
ES	EYEWASH/SAFETY SHOWER
EV	EVAPORATOR
FL	FILTER
FP	FILTER PRESS
GEN	GENERATOR
HP	HOPPER
HT	HOIST
HTR	HEATER

ABBV.

IX	ION EXCHANGER
M	MOTOR
MMF	MULTIMEDIA FILTER
MX	MIXER
PU	PUMP
PCV	PRESSURE CONTROL VALVE
PRV	PRESSURE RELIEF VALVE
PS	PIPE SUPPORT
R	RAKE
RO	REVERSE OSMOSIS
SI	SILO
SB	SPLITTER BOX
SP	SAMPLE POINT
SS	SAFETY SHOWER
STR	STRAINER
SU	SUMP
TH	THICKENER
TK	TANK
US	UTILITY STATION
VP	VENDOR PACKAGE

PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

P&ID SYMBOLS AND ABBREVIATIONS SHEET 1

PROJECT NO.
1912808404

REV.

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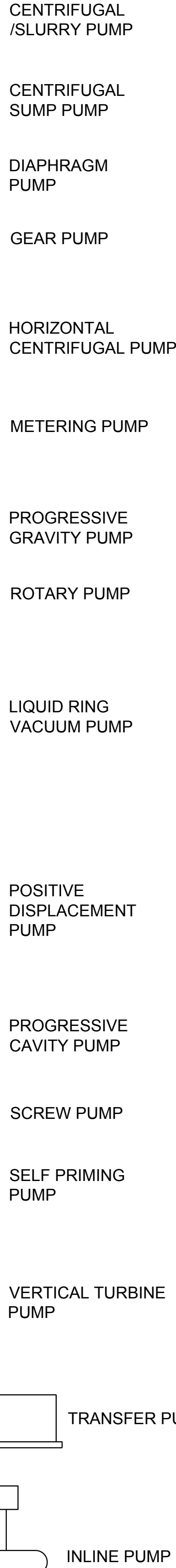
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DRAWING

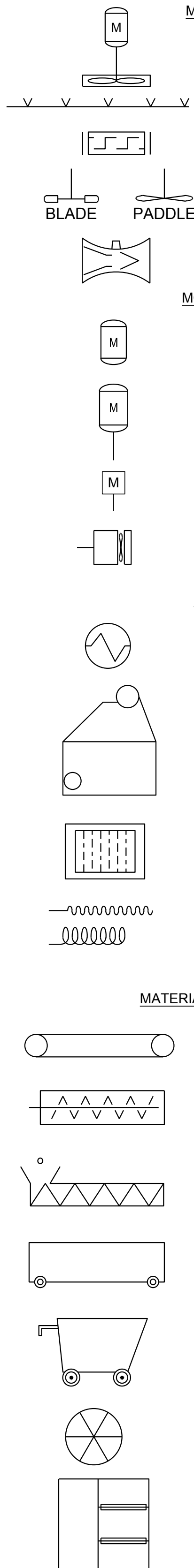
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1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI D

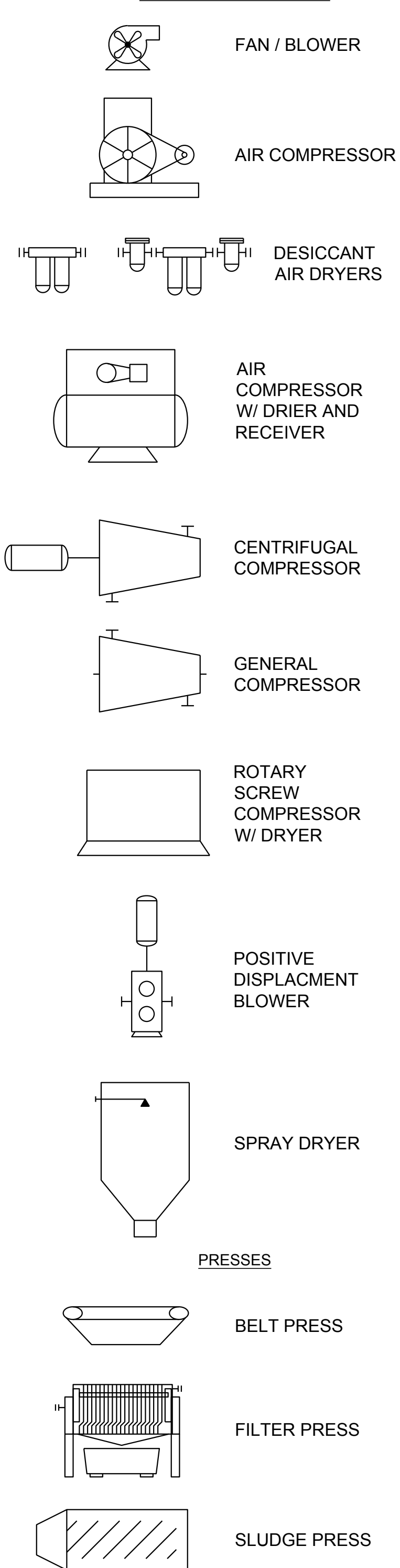
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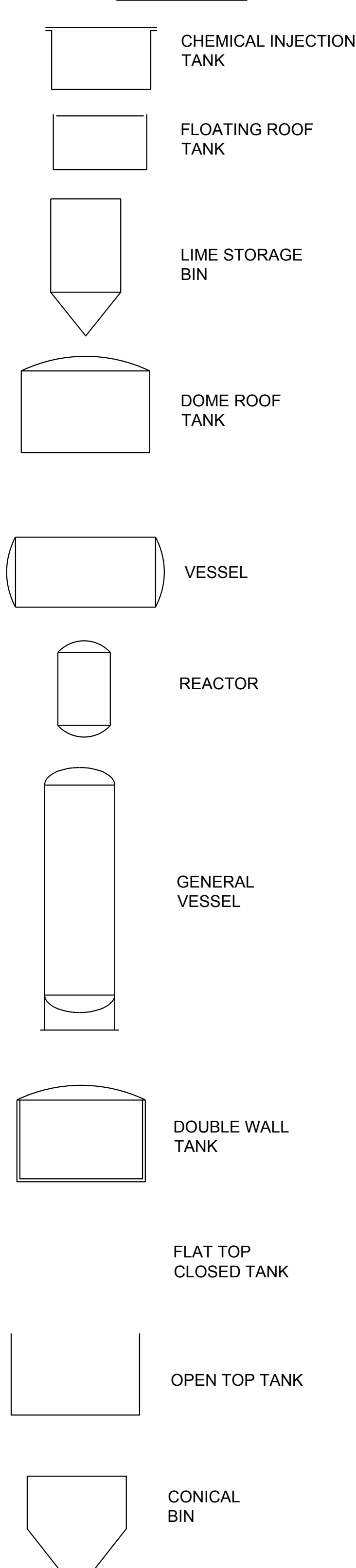
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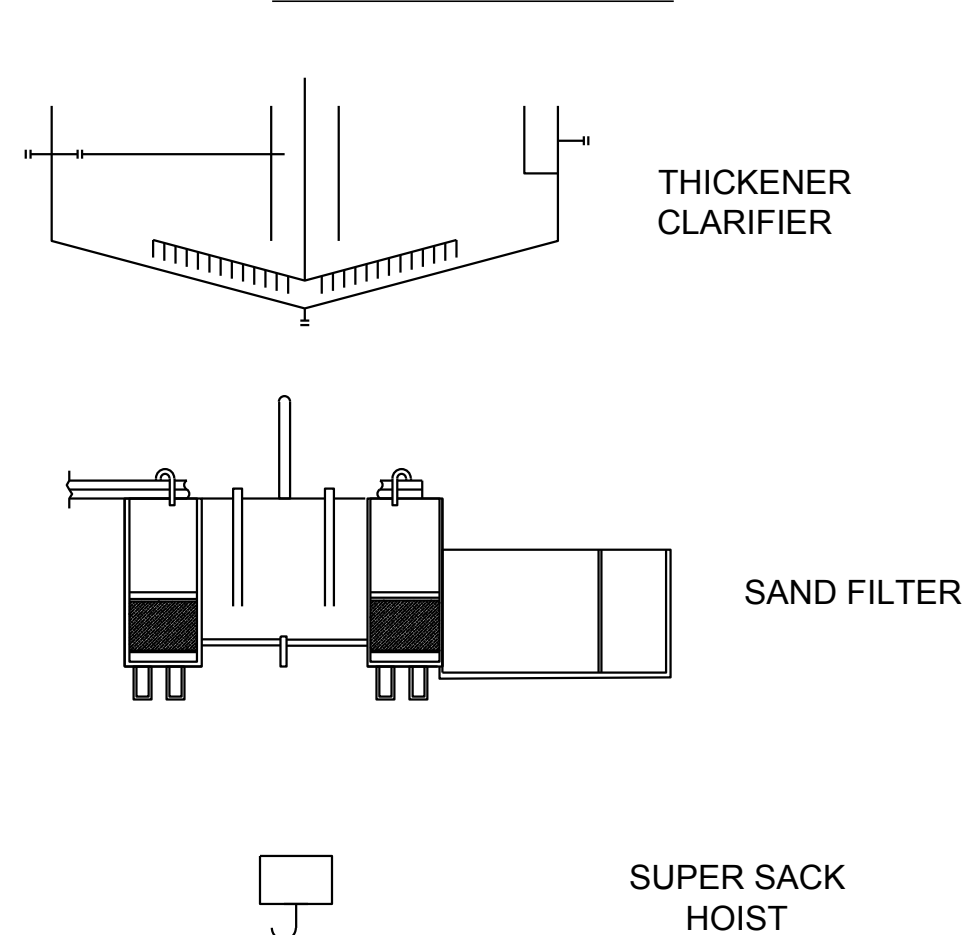
COMPRESSORS/DRYERS



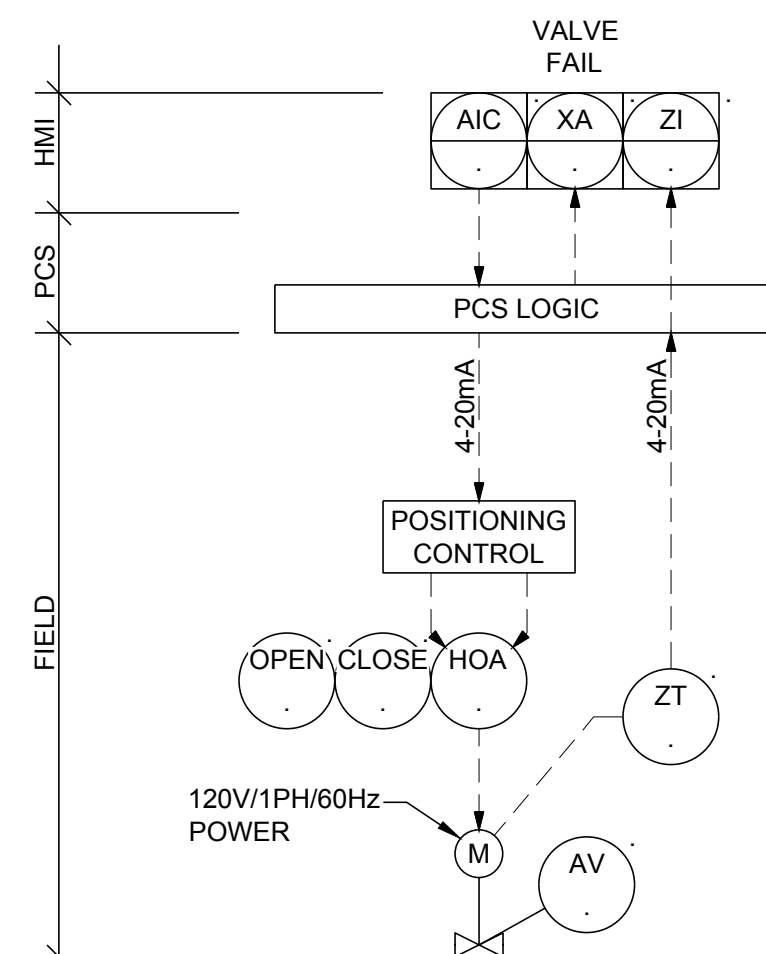
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MISCELLANEOUS SYMBOLS



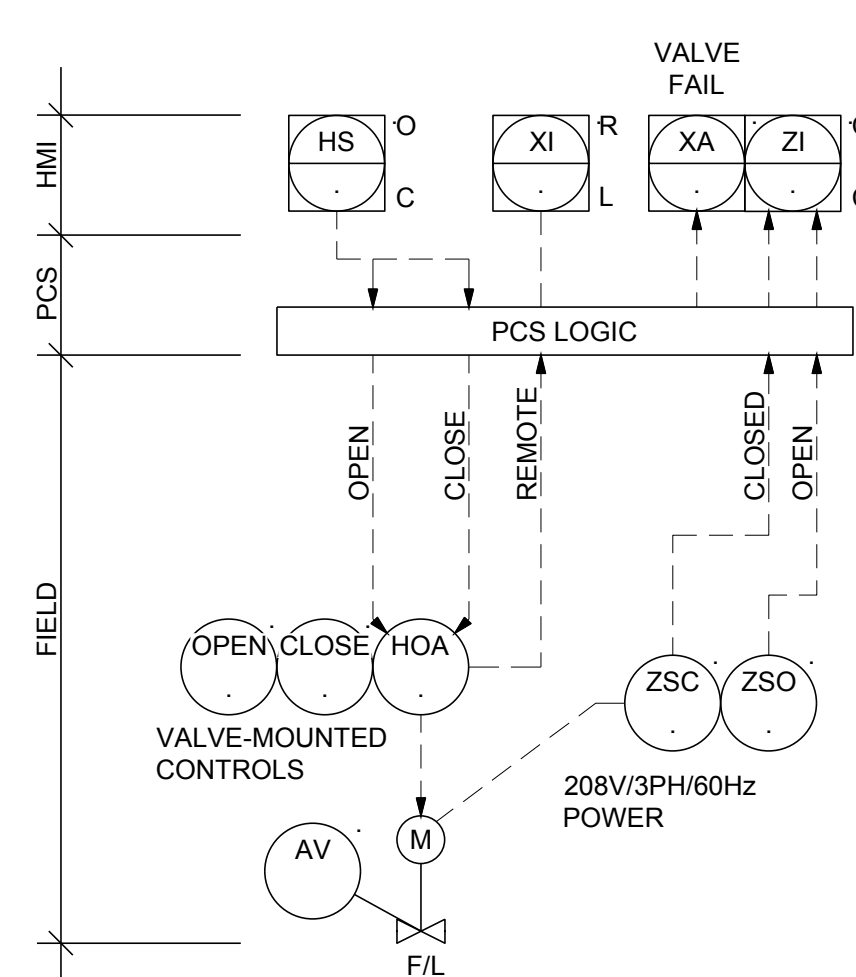
MISCELLANEOUS SYMBOLS



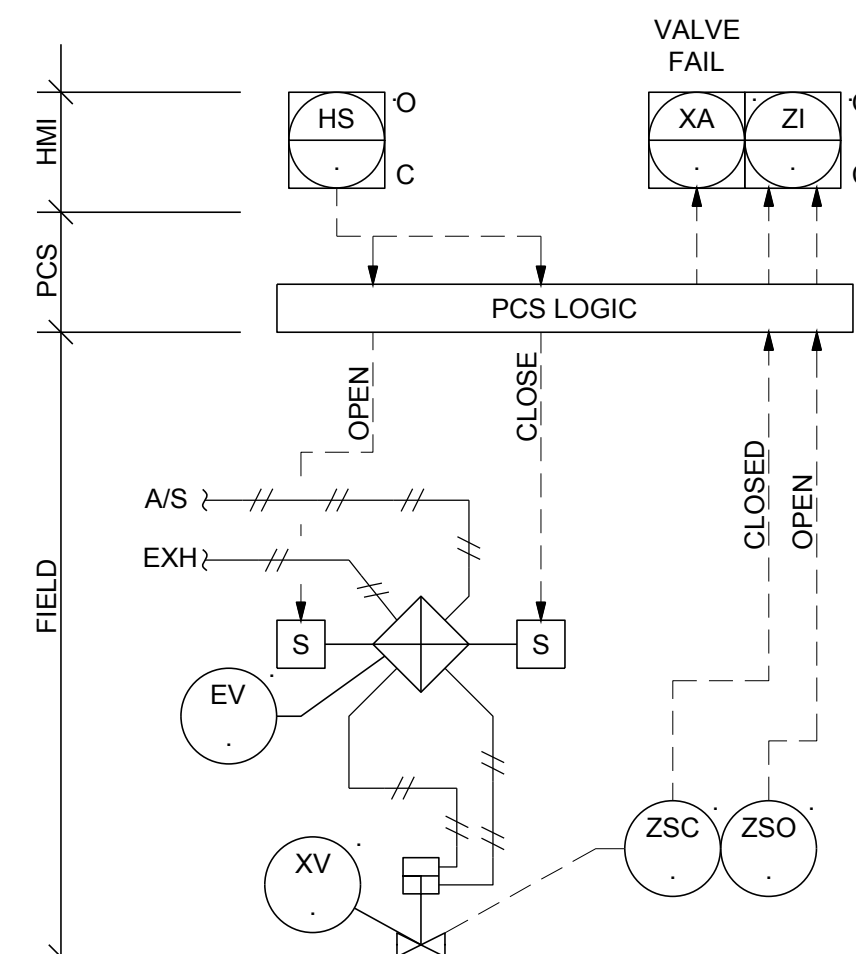
NOTES:

1. VALVE TAG VARIES WITH FUNCTION. EXAMPLE IS FOR AN ANALYSIS (pH) CONTROL VALVE.

MISCELLANEOUS SYMBOLS



F/L = FAIL LAST



F/L = FAIL LAST
A/S = AIR SUPPLY
EXH = EXHAUST

1. SYMBOLS SHOWN ON THIS DRAWING ARE PER AMERICAN NATIONAL STANDARD INSTRUMENTATION SYMBOLS AND IDENTIFICATION (ANSI/ISA-S5.1-1984).
2. ALL SYMBOLS SHOWN MAY NOT BE INCORPORATED IN THIS PROJECT.
3. ALL SYMBOLS SHOWN ARE SCALABLE TO FIT THE APPLICATION.

SEAL



CLIENT



CONSULTANT

CLIMAX, COLORADO
FREMONT PASS

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PROJECT
CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE
P&ID SYMBOLS AND ABBREVIATIONS SHEET 3

PROJECT NO.	REV.	of	DRAWING
1912808404	0		800-1A-D-003

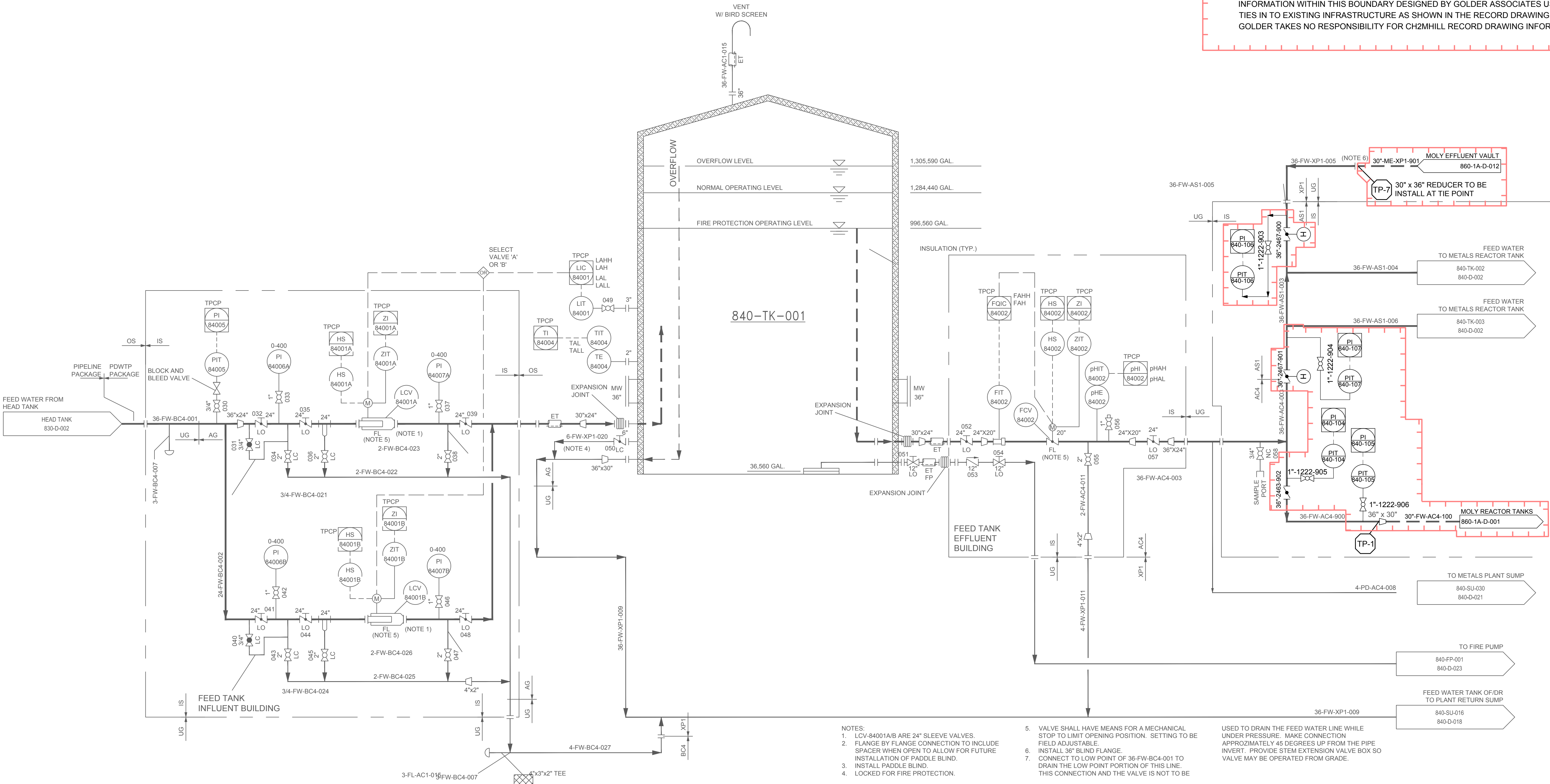
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840-TK-001
SERVICE: FEED WATER TANK
TYPE: CIRCULAR
SIZE: 80'-0" DIA x 40'-0" HIGH
VOLUME: 1,417,000 GAL
MATERIAL: CARBON STEEL

LEGEND
RECORD DRAWING GOLDER DESIGN

MOLYBDENUM WATER TREATMENT PLANT DESIGN NOTE(S)
A. THE INFORMATION OUTSIDE THE RECORD DRAWING BORDER, IS FROM: RECORD DRAWING NO. 860-D-001 DATED 2014-03-14, REVISION NUMBER 4, BY CH2MHILL. ALL INFORMATION WITHIN THIS BOUNDARY DESIGNED BY GOLDER ASSOCIATES USA INC TIES IN TO EXISTING INFRASTRUCTURE AS SHOWN IN THE RECORD DRAWING. GOLDER TAKES NO RESPONSIBILITY FOR CH2MHILL RECORD DRAWING INFORMATION.



- NOTES:
1. LCV-84001A/B ARE 24" SLEEVE VALVES.
2. FLANGE BY FLANGE CONNECTION TO INCLUDE SPACER WHEN OPEN TO ALLOW FOR FUTURE INSTALLATION OF PADDLE BLIND.
3. INSTALL PADDLE BLIND.
4. LOCKED FOR FIRE PROTECTION.
5. VALVE SHALL HAVE MEANS FOR A MECHANICAL STOP TO LIMIT OPENING POSITION. SETTING TO BE FIELD ADJUSTABLE.
6. INSTALL 36" BLIND FLANGE.
7. CONNECT TO LOW POINT OF 36-FW-BC4-001 TO DRAIN THE LOW POINT PORTION OF THIS LINE. THIS CONNECTION AND THE VALVE IS NOT TO BE

USED TO DRAIN THE FEED WATER LINE WHILE UNDER PRESSURE. MAKE CONNECTION APPROXIMATELY 45 DEGREES UP FROM THE PIPE. INVERT. PROVIDE STEM EXTENSION VALVE BOX SO VALVE MAY BE OPERATED FROM GRADE.

SEAL



CLIENT
CLIMAX Molybdenum
A Freeport-McMoRan Company
CLIMAX, COLORADO
FREMONT PASS

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PROJECT
CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

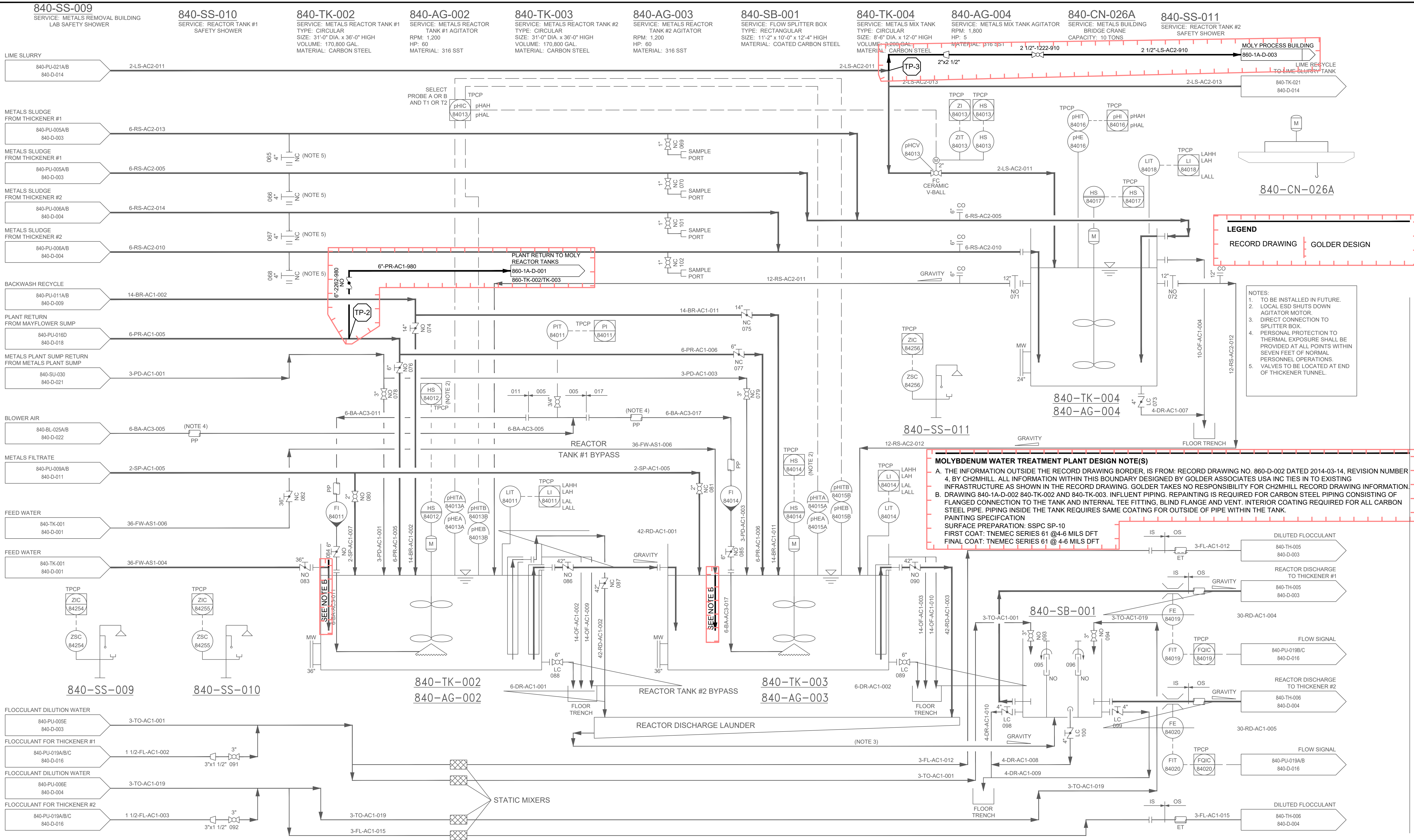
TITLE
PROPERTY DISCHARGE WATER TREATMENT PLANT PDWTP
FEED WATER TANK

PROJECT NO. 1912808404
REV. 0
of
DRAWING 840-1A-D-001

0	2022-04-05	ISSUED FOR CONSTRUCTION	JCS	EPB	CAB	EPB
REV.	YYYY-MM-DD	DESCRIPTION	PREPARED	DESIGNED	REVIEWED	APPROVED

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI D

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SEAL



CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

CLIMAX, COLORADO
FREMONT PASS

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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

**PROPERTY DISCHARGE WATER TREATMENT PLANT METALS
MIX AND REACTOR**

PROJECT NO.
1912808404

REV.

0

of

DRAWING

840-1A-D-002

0 2022-04-05 ISSUED FOR CONSTRUCTION

REV. YYYY-MM-DD DESCRIPTION

JCS EPB CAB EPB

PREPARED DESIGNED REVIEWED APPROVED

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI D

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840-TK-021
SERVICE: LIME SLURRY TANK
TYPE: CIRCULAR
SIZE: 28'-0" DIA. x 32'-0" HIGH
VOLUME: 115,000 GAL.
MATERIAL: CARBON STEEL

840-AG-021
SERVICE: LIME SLURRY TANK AGITATOR
RPM: 1,200
HP: 40
MATERIAL: 316 SST

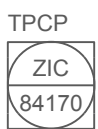
840-PU-021A
SERVICE: LIME SLURRY PUMP #1
CAPACITY: 70 GPM
DISCHARGE: 131 FT TDH
RPM: 1780
HP: 15

840-PU-021B
SERVICE: LIME SLURRY PUMP #2 (SPARE)
CAPACITY: 70 GPM
DISCHARGE: 131 FT TDH
RPM: 1780
HP: 15

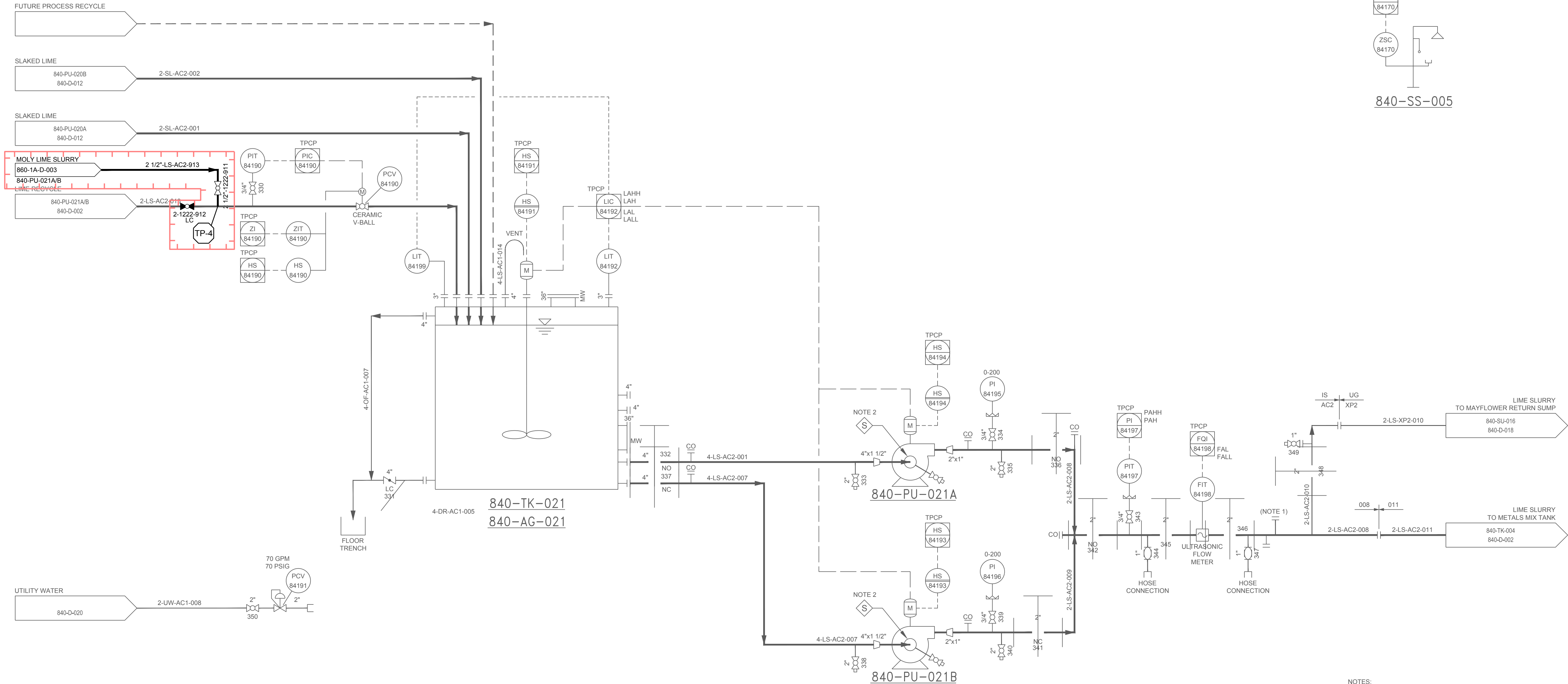
840-SS-005
SERVICE: LIME SLURRY
TANK SAFETY SHOWER

MOLYBDENUM WATER TREATMENT PLANT DESIGN NOTE(S)
A. THE INFORMATION OUTSIDE THE RECORD DRAWING BORDER, IS FROM: RECORD DRAWING NO. 860-D-014 DATED 2014-03-14, REVISION NUMBER 4, BY CH2MHILL. ALL INFORMATION WITHIN THIS BOUNDARY DESIGNED BY GOLDER ASSOCIATES USA INC TIES IN TO EXISTING INFRASTRUCTURE AS SHOWN IN THE RECORD DRAWING. GOLDER TAKES NO RESPONSIBILITY FOR CH2MHILL RECORD DRAWING INFORMATION.

LEGEND
RECORD DRAWING | GOLDER DESIGN



840-SS-005



NOTES:
1. FOR FUTURE LIME LOOP.
2. SEE 840-D-020 FOR SEAL WATER DETAIL.

SEAL



CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

CLIMAX, COLORADO
FREMONT PASS

CONSULTANT



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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

**PROPERTY DISCHARGE WATER TREATMENT PLANT SLAKED
LIME STORAGE AND FEED**

PROJECT NO.
1912808404

REV.

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of

DRAWING

840-1A-D-014

REV.	YYYY-MM-DD	DESCRIPTION	PREPARED	DESIGNED	REVIEWED	APPROVED
0	2022-04-05	ISSUED FOR CONSTRUCTION	JCS	EPB	CAB	EPB

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840-PV-016
SERVICE: MAYFLOWER RETURN SURGE TANK
TYPE: BLADDER TANK
SIZE: 5'-0" DIA. x 5'-0" S/S
CAPACITY: 975 GAL.
PRESSURE: 350 PSIG

840-PU-016A
SERVICE: MAYFLOWER RETURN PUMP
CAPACITY: 3,500 GPM
DISCHARGE: 534 FT TDH
RPM: 1,800
HP: 700

840-PU-016B
SERVICE: MAYFLOWER RETURN PUMP
CAPACITY: 3,500 GPM
DISCHARGE: 534 FT TDH
RPM: 1,800
HP: 700

840-PU-016C
SERVICE: MAYFLOWER RETURN PUMP (SPARE)
CAPACITY: 3,500 GPM
DISCHARGE: 534 FT TDH
RPM: 1,800
HP: 700

840-PU-016D
SERVICE: MAYFLOWER RETURN SUMP PUMP
CAPACITY: 500 GPM
DISCHARGE: 76 FT TDH
RPM: 1,800
HP: 20

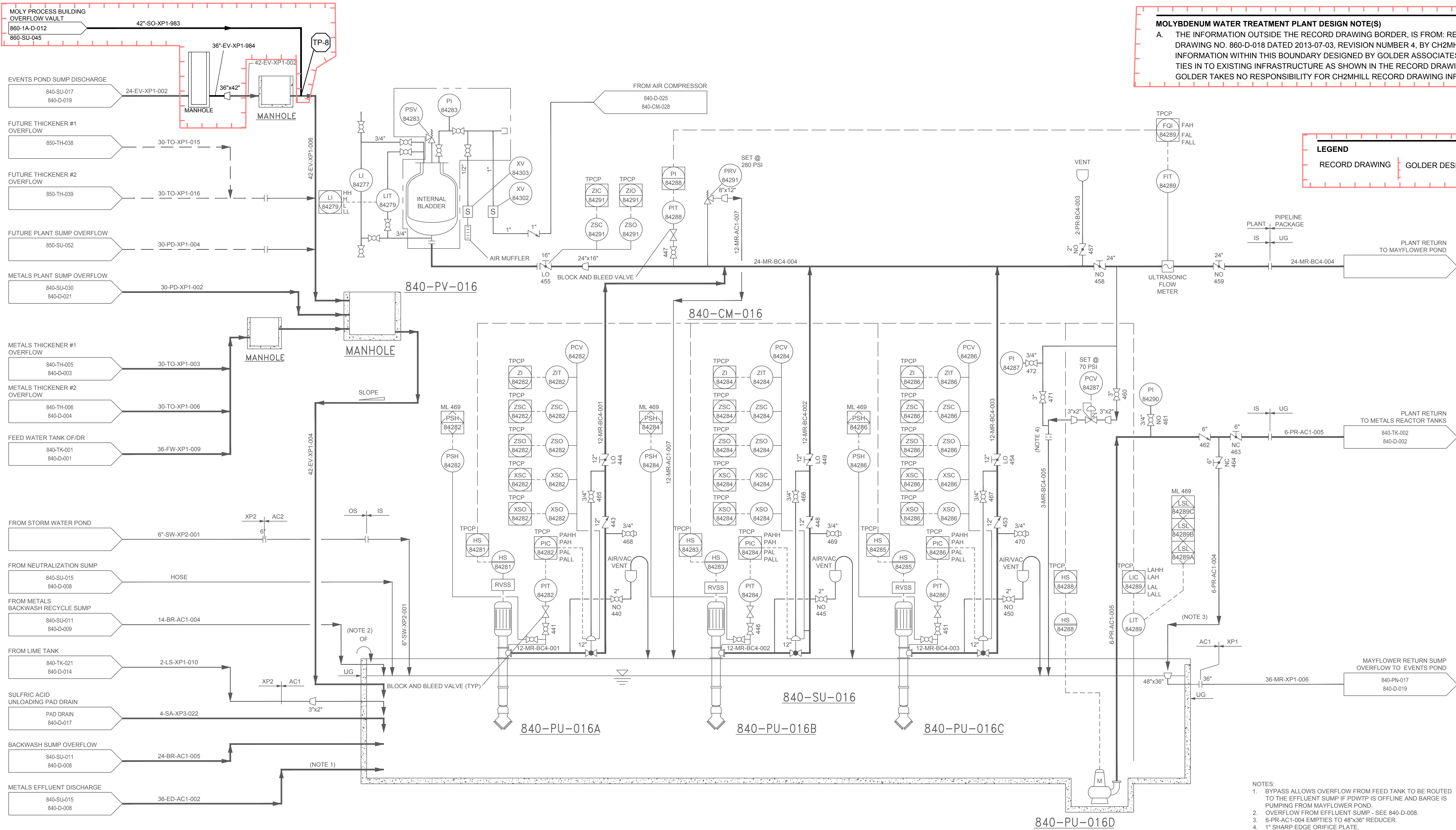
840-SU-016
SERVICE: MAYFLOWER RETURN SUMP
TYPE: RECTANGULAR
SIZE: 44'-0" L x 25'-6" W x 27'-4" D
VOLUME: 191,643 GAL.
MATERIAL: CONCRETE

MOLYBDENUM WATER TREATMENT PLANT DESIGN NOTE(S)

- A. THE INFORMATION OUTSIDE THE RECORD DRAWING BORDER, IS FROM: RECORD DRAWING NO. 860-D-018 DATED 2013-07-03, REVISION NUMBER 4, BY CH2MHILL. ALL INFORMATION WITHIN THIS BOUNDARY DESIGNED BY GOLDER ASSOCIATES USA INC TIES IN TO EXISTING INFRASTRUCTURE AS SHOWN IN THE RECORD DRAWING. GOLDER TAKES NO RESPONSIBILITY FOR CH2MHILL RECORD DRAWING INFORMATION.

LEGEND

RECORD DRAWING GOLDER DESIGN



- NOTES:
1. BYPASS ALLOWS OVERFLOW FROM FEED TANK TO BE ROUTED TO THE EFFLUENT SUMP IF POWPT IS OFFLINE AND BARGE IS PUMPING FROM MAYFLOWER POND.
2. OVERFLOW FROM EFFLUENT SUMP - SEE 840-D-008.
3. 6-PR-AC1-004 EMPTIES TO 48"x36" REDUCER.
4. 1" SHARP EDGE ORIFICE PLATE.

SEAL



CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

CLIMAX, COLORADO
FREMONT PASS

CONSULTANT



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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

**PROPERTY DISCHARGE WATER TREATMENT PLANT
MAYFLOWER RETURN SUMP**

PROJECT NO.

1912808404

REV.

0

of

DRAWING

840-1A-D-018

0 2022-04-05 ISSUED FOR CONSTRUCTION

REV. YYYY-MM-DD DESCRIPTION

JCS EPB CAB EPB

PREPARED DESIGNED REVIEWED APPROVED

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI D

840-PU-022D

SERVICE: UTILITY WATER WELL PUMP
CAPACITY: 55 GPM
DISCHARGE: 180 FT.
RPM: 3,600
HP: 5

840-PU-022H

SERVICE: UTILITY WATER WELL PUMP
CAPACITY: 55 GPM
DISCHARGE: 180 FT.
RPM: 3,600
HP: 5

840-TK-022A

SERVICE: UTILITY WATER TANK
TYPE: CIRCULAR
SIZE: 12'-0" DIA. x 12'-0" HIGH
MATERIAL: COATED CARBON STEEL

840-PU-022A

SERVICE: UTILITY WATER PUMP
CAPACITY: 285 GPM
DISCHARGE: 185 FT TDH
RPM: 3,600
HP: 25

840-PU-022B

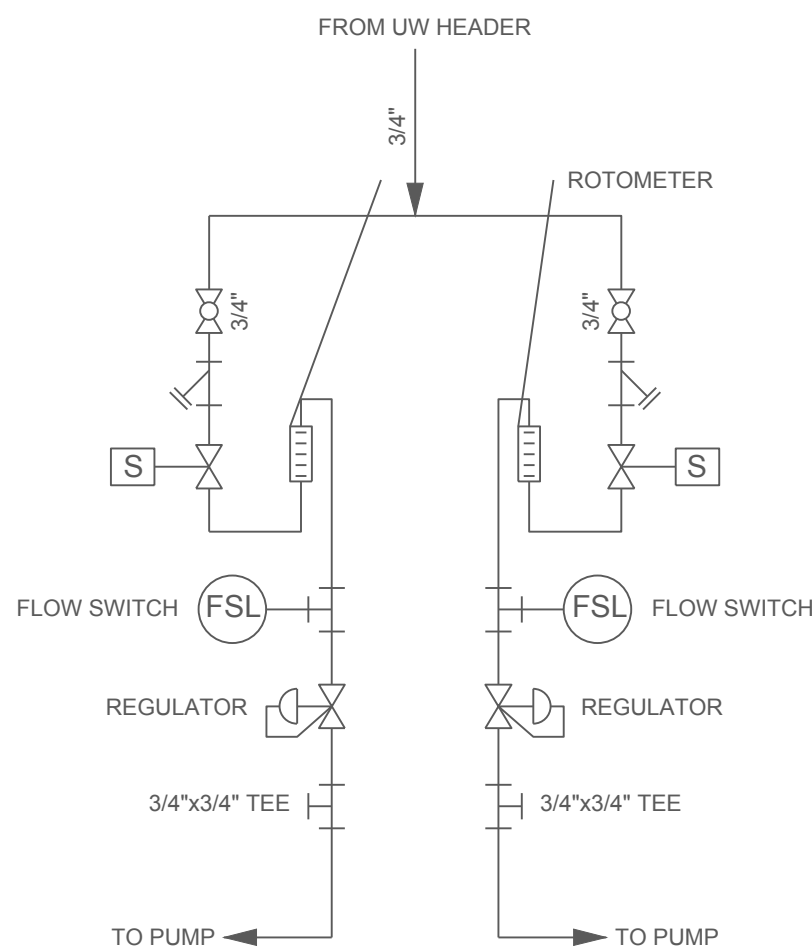
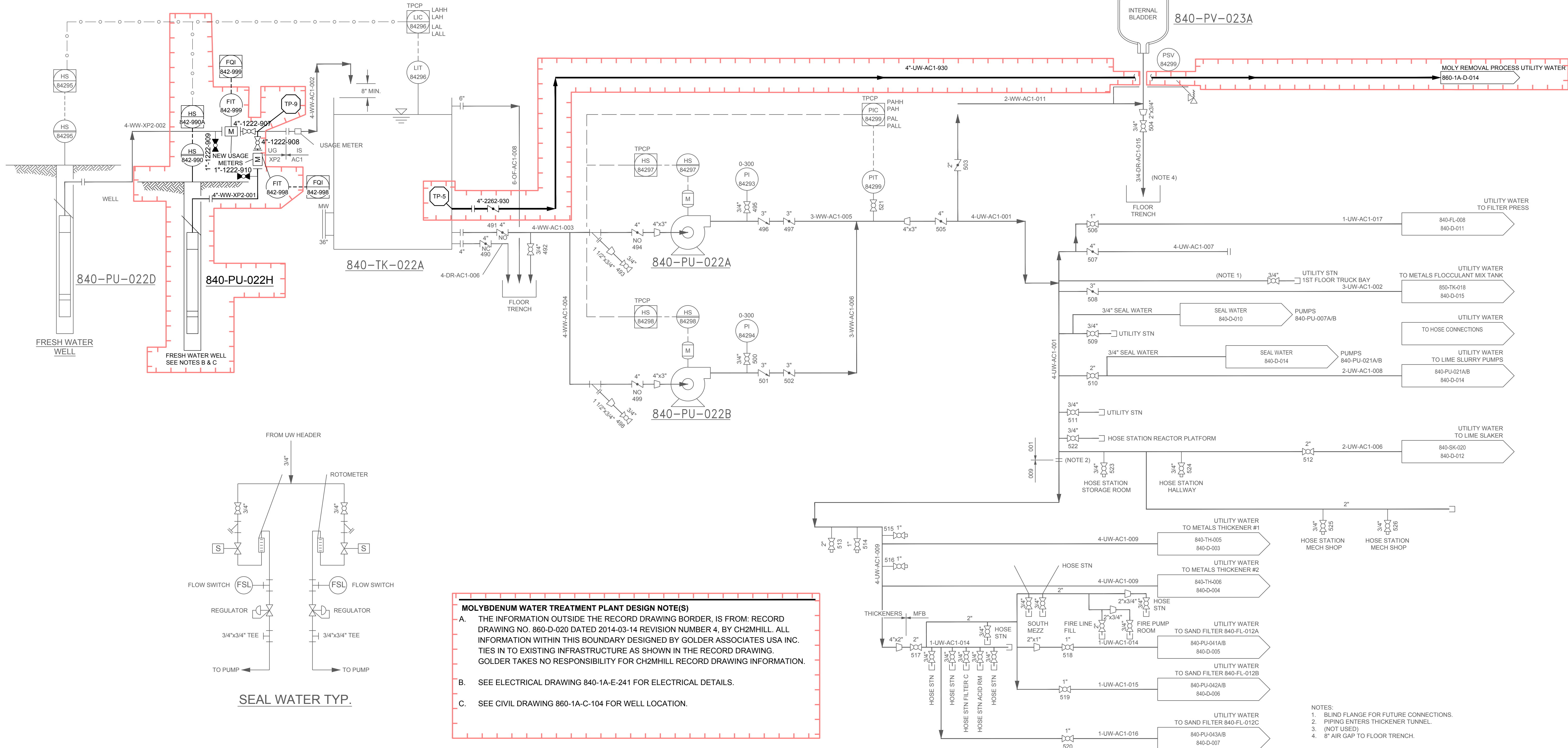
SERVICE: UTILITY WATER PUMP (SPARE)
CAPACITY: 285 GPM
DISCHARGE: 185 FT TDH
RPM: 3,600
HP: 25

840-PV-023A

SERVICE: ACCUMULATOR
TYPE: BLADDER TANK
SIZE: 48" DIA x 123" H
CAPACITY: 800 GAL
RATING: 200 PSIG
MATERIAL: COATED CARBON STEEL

LEGEND

RECORD DRAWING | GOLDER DESIGN



MOLYBDENUM WATER TREATMENT PLANT DESIGN NOTE(S)

- A. THE INFORMATION OUTSIDE THE RECORD DRAWING BORDER, IS FROM: RECORD DRAWING NO. 860-D-020 DATED 2014-03-14 REVISION NUMBER 4, BY CH2MHILL. ALL INFORMATION WITHIN THIS BOUNDARY DESIGNED BY GOLDER ASSOCIATES USA INC. TIES IN TO EXISTING INFRASTRUCTURE AS SHOWN IN THE RECORD DRAWING. GOLDER TAKES NO RESPONSIBILITY FOR CH2MHILL RECORD DRAWING INFORMATION.
- B. SEE ELECTRICAL DRAWING 840-1A-E-241 FOR ELECTRICAL DETAILS.
- C. SEE CIVIL DRAWING 860-1A-C-104 FOR WELL LOCATION.

- NOTES:
1. BLIND FLANGE FOR FUTURE CONNECTIONS.
 2. PIPING ENTERS THICKENER TUNNEL.
 3. (NOT USED)
 4. 8" AIR GAP TO FLOOR TRENCH.

SEAL



CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

CLIMAX, COLORADO
FREMONT PASS

CONSULTANT



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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

**PROPERTY DISCHARGE WATER TREATMENT PLANT
UTILITY WATER SYSTEM**

PROJECT NO.
1912808404

REV. of DRAWING
0 840-1A-D-020

0 2022-04-05 ISSUED FOR CONSTRUCTION

JCS EPB CAB EPB

REV. YYYY-MM-DD DESCRIPTION

PREPARED DESIGNED REVIEWED APPROVED

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840-DE-001
SERVICE: FIRE PUMP DIESEL ENGINE
CAPACITY:
HP: 460
RPM: 1750

840-TK-031B
SERVICE: FIRE PUMP DIESEL TANK
TYPE: DOUBLE WALL
VOLUME: 515 GAL
MATERIAL: STEEL

840-PU-031A
SERVICE: FIRE PUMP
CAPACITY: 3,000 GPM
DISCHARGE: 254 FT TDH
RPM: 1785
HP: 422

840-PU-031B
SERVICE: FIRE SYSTEM JOCKEY PUMP
CAPACITY: 10 GPM
DISCHARGE: 323 FT TDH
RPM: 3500
HP: 3

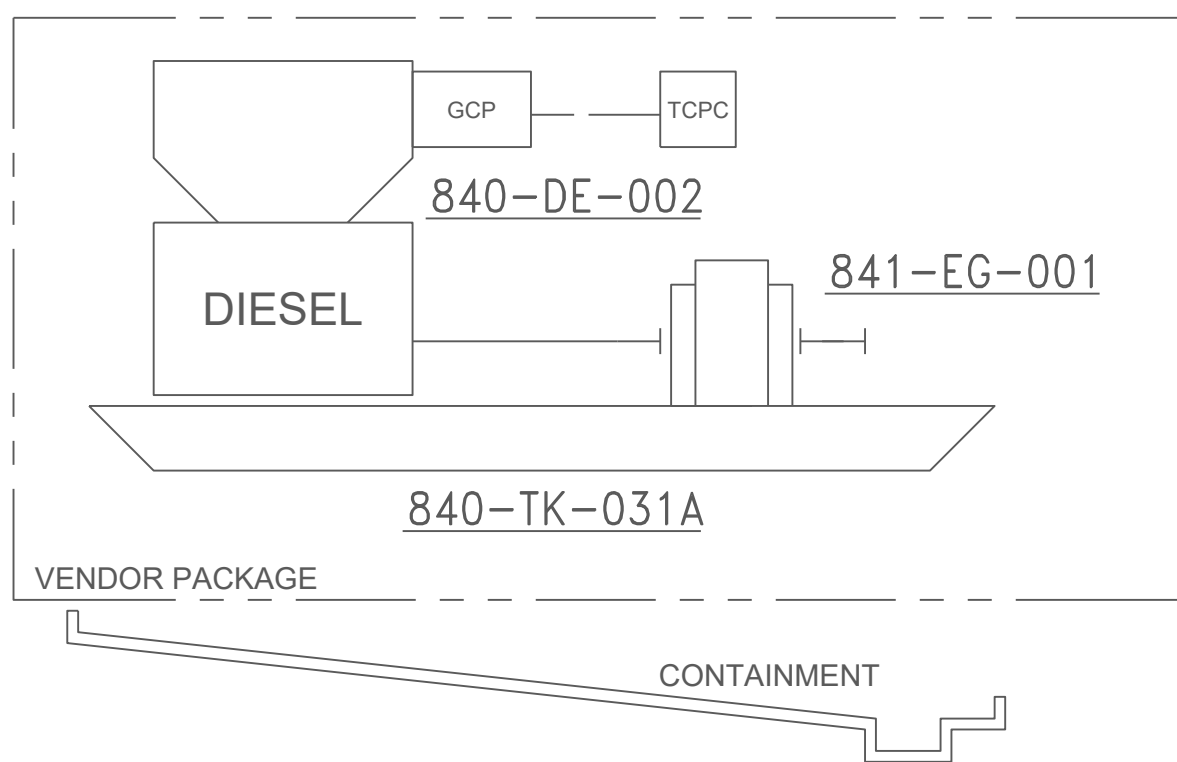
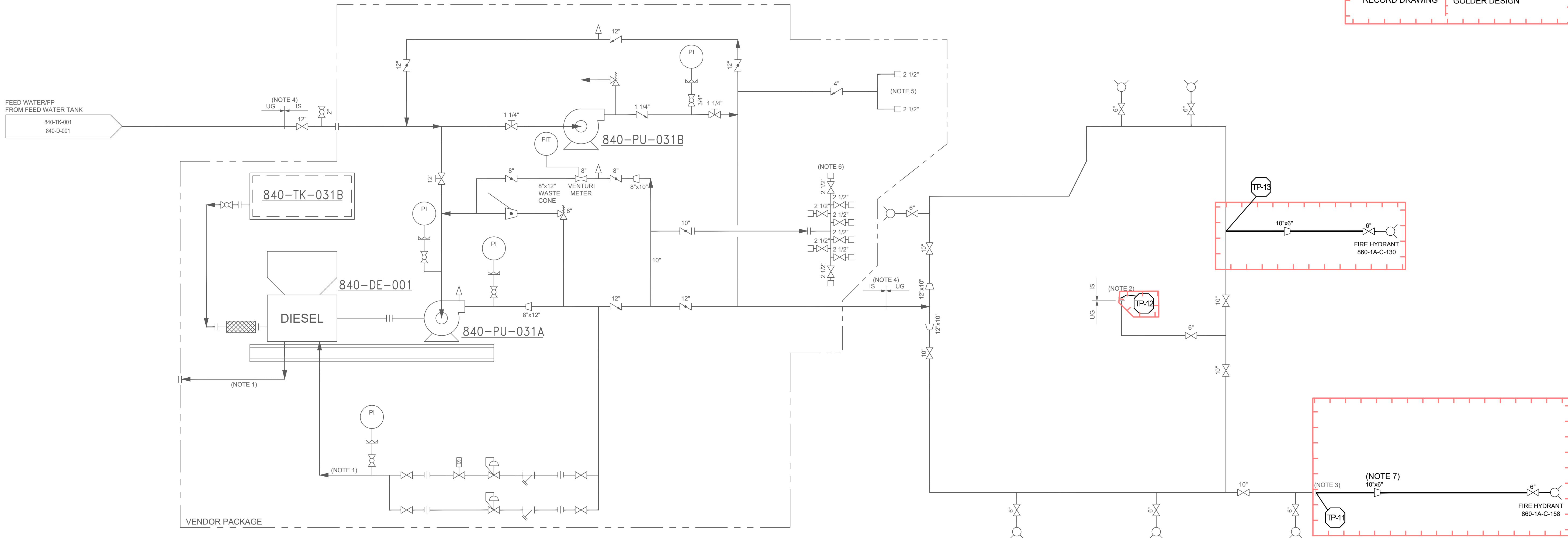
840-DE-002
SERVICE: METALS PLANT GENERATOR ENGINE
CAPACITY: 1,000 KW/1,250 KVA
HP: 3

840-TK-031A
SERVICE: GENERATOR DIESEL TANK
TYPE: BELLY TANK
VOLUME: BY VENDOR
MATERIAL: BY VENDOR

840-GN-001
SERVICE: METALS PLANT GENERATOR
CAPACITY: 1,000 KW/1,250 KVA

LEGEND

RECORD DRAWING | GOLDER DESIGN



MOLYBDENUM WATER TREATMENT PLANT DESIGN NOTE(S)

- A. THE INFORMATION OUTSIDE THE RECORD DRAWING BORDER, IS FROM: RECORD DRAWING NO. 860-D-023 DATED 2014-03-14 REVISION NUMBER 4, BY CH2MHILL. ALL INFORMATION WITHIN THIS BOUNDARY DESIGNED BY GOLDER ASSOCIATES USA INC TIES IN TO EXISTING INFRASTRUCTURE AS SHOWN IN THE RECORD DRAWING. GOLDER TAKES NO RESPONSIBILITY FOR CH2MHILL RECORD DRAWING INFORMATION.

NOTES:

1. CONNECTION FOR DIESEL ENGINE COOLING SYSTEM
2. CONNECTION TO METALS REMOVAL BUILDING AND MOLY PROCESS BUILDING.
3. CONNECTION FOR FUTURE EXPANSION: CONNECTION TO MRWTP HYDRANT.
4. SEE FIRE PROTECTION DRAWINGS FOR FIRE PROTECTION PIPING ARRANGEMENT AND DETAILS.
5. 2 1/2" FIRE DEPARTMENT INLET CONNECTION WITH INLINE CHECK AND BALL DRIP VALVE.
6. 10" HOSE HEADER ASSEMBLY WITH BALL DRIP VALVE, NIPPLES, AND HOSE VALVES WITH COPS AND CHAINS.
7. FUTURE CONNECTION FOR ADDITIONAL BUILDING WILL BE FIELD LOCATED AND SIZED IN THE FUTURE. CONTRACTOR TO PROVIDE SURVEY LOCATION FOR POTENTIAL FUTURE ACCESS.

SEAL



CLIENT

Climax Molybdenum
A Freeport-McMoRan Company

CLIMAX, COLORADO
FREMONT PASS

CONSULTANT

GOLDER
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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

**PROPERTY DISCHARGE WATER TREATMENT PLANT FIRE
LOOP & EMERGENCY GENERATOR**

PROJECT NO.
1912808404

REV.

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of

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DRAWING

840-1A-D-023

0 2022-04-05 ISSUED FOR CONSTRUCTION

REV. YYYY-MM-DD DESCRIPTION

JCS EPB CAB EPB

PREPARED DESIGNED REVIEWED APPROVED

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI D

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840-PU-022G
SERVICE: POTABLE WATER WELL PUMP
CAPACITY: 5 GPM
DISCHARGE: 90 FT.
RPM: 3,600
HP: 1/2

840-TK-022B
SERVICE: POTABLE WATER FEED TANK
TYPE: CIRCULAR
SIZE: 4'-0" DIA. x 6'-4" HIGH
CAPACITY: 530 GAL
MATERIAL: XPLE

840-TK-027
SERVICE: SODIUM HYPOCHLORITE
STORAGE TANK
TYPE: BY VENDOR
SIZE: BY VENDOR
CAPACITY: 35 GAL
MATERIAL: BY VENDOR

840-PU-027B
SERVICE: SODIUM HYPOCHLORITEMETERING PUMP
CAPACITY: 0.001 - 0.026 GPM
DISCHARGE: BY VENDOR
RPM: BY VENDOR
HP: BY VENDOR

840-UV-027
SERVICE: POTABLE WATER UV UNIT
CAPACITY: 5 GPM
SIZE: BY VENDOR

840-TK-022C
SERVICE: POTABLE WATER RESERVOIR
TYPE: CIRCULAR
SIZE: 8'-0" DA. x 10'-0" HIGH
CAPACITY: 3,290 GAL
MATERIAL: XPLE

840-PU-022E
SERVICE: POTABLE WATER PUMP
CAPACITY: 65 GPM
DISCHARGE: 115 FT TDH
RPM: 3,600
HP: 5

840-PV-023B
SERVICE: POTABLE WATER ACCUMULATOR
TYPE: BLADDER TANK
SIZE: 30" DIA x 58" H
CAPACITY: 160 GAL
RATING: 150 PSIG
MATERIAL: COATED CARBON STEEL

840-SS-012
SERVICE: SODIUM HYPOCHLORITE
SAFETY SHOWER

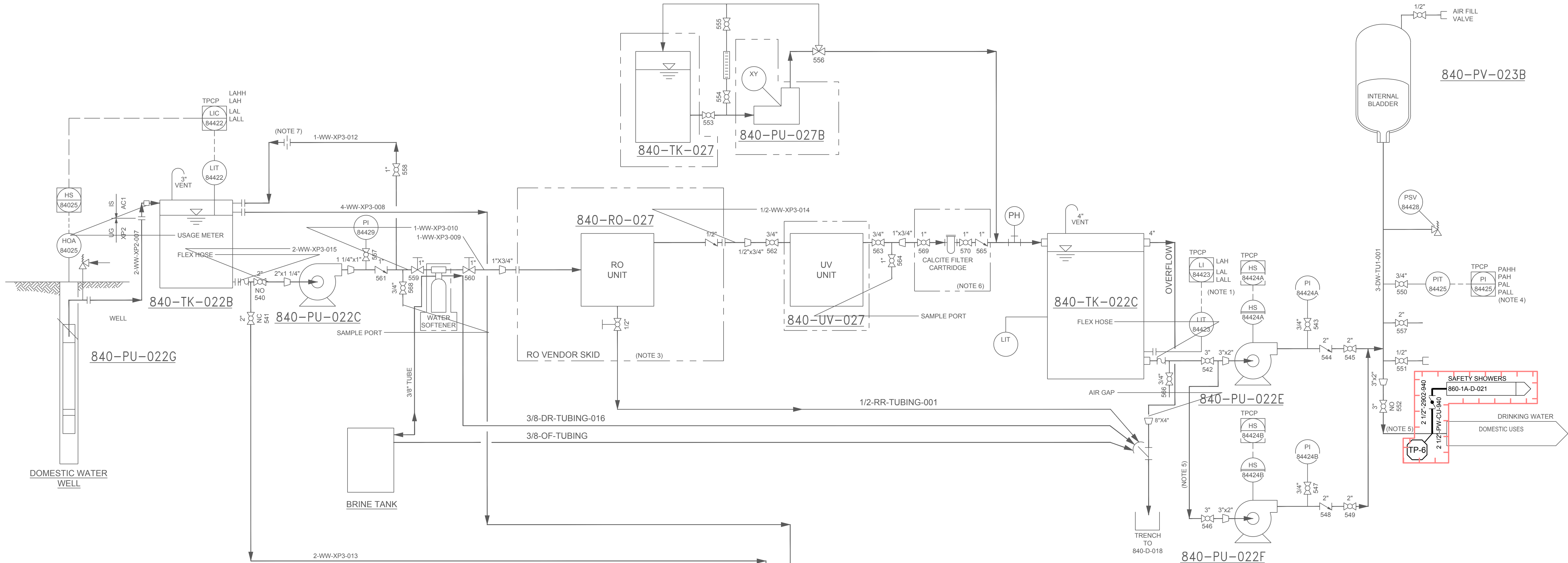
840-RO-027
SERVICE: POTABLE WATER RO UNIT
CAPACITY: 1200 GPD
SIZE: BY VENDOR

840-PU-022C
SERVICE: POTABLE WATER SYSTEM
BOOSTER PUMP
CAPACITY: 7 GPM
DISCHARGE: 208 FT TDH
RPM: 3,600
HP: 1

840-PU-022F
SERVICE: POTABLE WATER PUMP (STANDBY)
CAPACITY: 65 GPM
DISCHARGE: 115 FT TDH
RPM: 3,600
HP: 5

840-SS-012

840-PV-023B



LEGEND

RECORD DRAWING	GOLDER DESIGN
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MOLYBDENUM WATER TREATMENT PLANT DESIGN NOTE(S)

A. THE INFORMATION OUTSIDE THE RECORD DRAWING BORDER, IS FROM: RECORD DRAWING NO. 860-D-024 DATED 2013-03-13 REVISION NUMBER 4, BY CH2MHILL. ALL INFORMATION WITHIN THIS BOUNDARY DESIGNED BY GOLDER ASSOCIATES USA INC TIES IN TO EXISTING INFRASTRUCTURE AS SHOWN IN THE RECORD DRAWING. GOLDER TAKES NO RESPONSIBILITY FOR CH2MHILL RECORD DRAWING INFORMATION.

- NOTES:
1. LEVEL ALARM WILL STOP 840-PU-022E/F AND CALL RO SYSTEM TO FILL 840-TK-022C.
 2. USE DIELECTRIC UNION BETWEEN DIFFERENT METALS.
 3. ITEMS WITHIN THIS SCOPE BOX INCLUDED ON PRE-ASSEMBLED UNIT.
 4. PIT-84425 CONTROLS PU-022E/F.
 5. SEE PLUMBING SPEC AND DRAWINGS FOR PIPING MATERIAL(S).
 6. CALCITE CARTRIDGE FILTER PROVIDED WITH HOUSING ASSEMBLY, ISOLATION VALVES AND MOUNTING BRACKET.
 7. 1" CLASS 150 FLANGES WITH 0.170" SS SHARP EDGE ORIFICE.

0				2022-04-05	ISSUED FOR CONSTRUCTION	JCS	EPB	CAB	EPB
REV.	YYYY-MM-DD	DESCRIPTION		PREPARED	DESIGNED	REVIEWED	APPROVED		

SEAL



CLIENT



CLIMAX, COLORADO
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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

PROPERTY DISCHARGE WATER TREATMENT PLANT POTABLE
WATER SYSTEM

PROJECT NO.
1912808404

REV.

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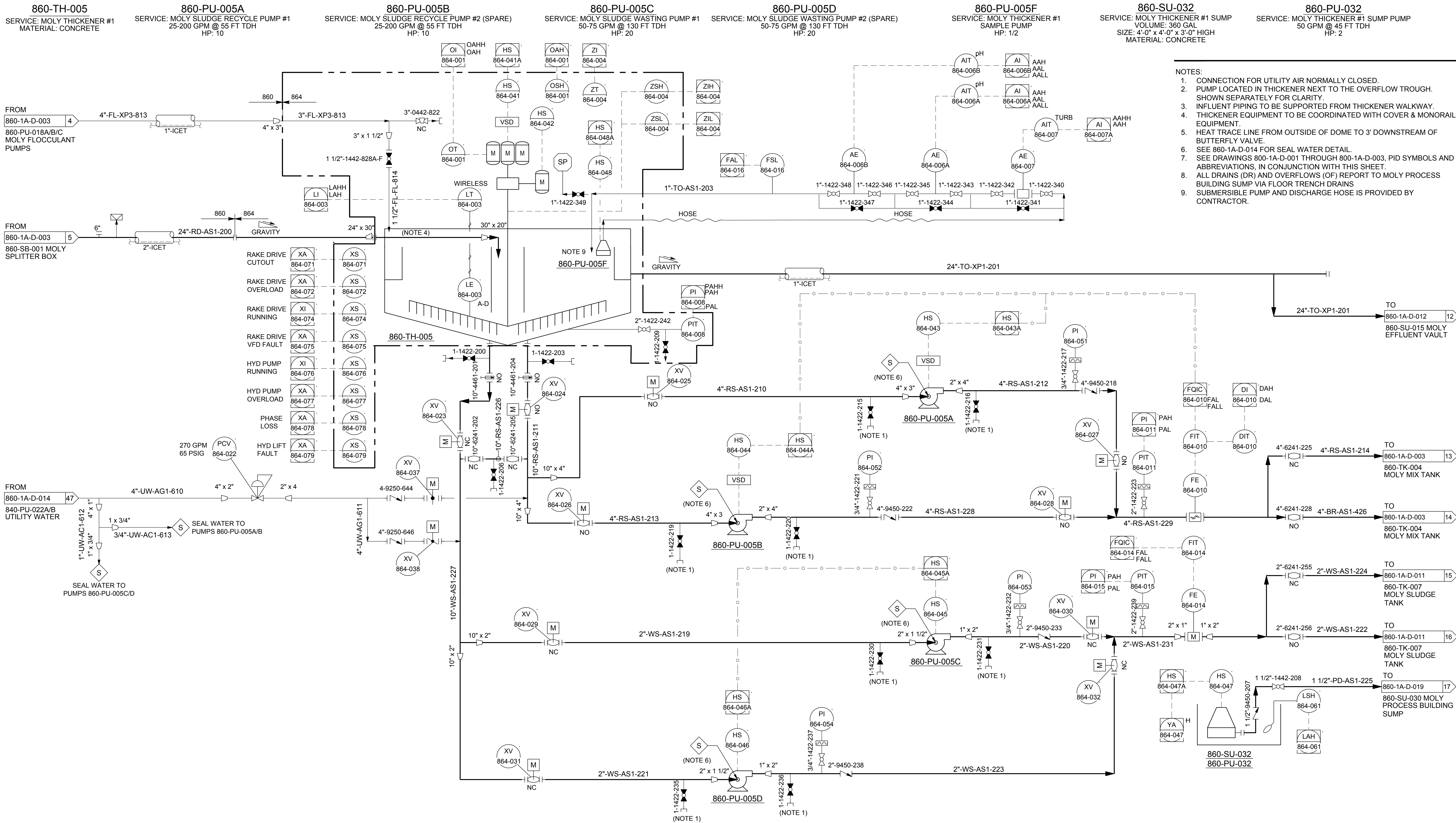
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DRAWING

840-1A-D-024

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI D

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0	2022-04-05	ISSUED FOR CONSTRUCTION	JCS	EPB	CAB	EPB
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SEAL



CLIENT
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A Freeport-McMoRan Company FREMONT PASS

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GOLDER MEMBER OF WSP

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PROJECT
CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE
**PIPING AND INSTRUMENTATION DIAGRAM
MOLY THICKENING SYSTEM #1**

PROJECT NO.
1912808404

REV.
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of
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1912808404

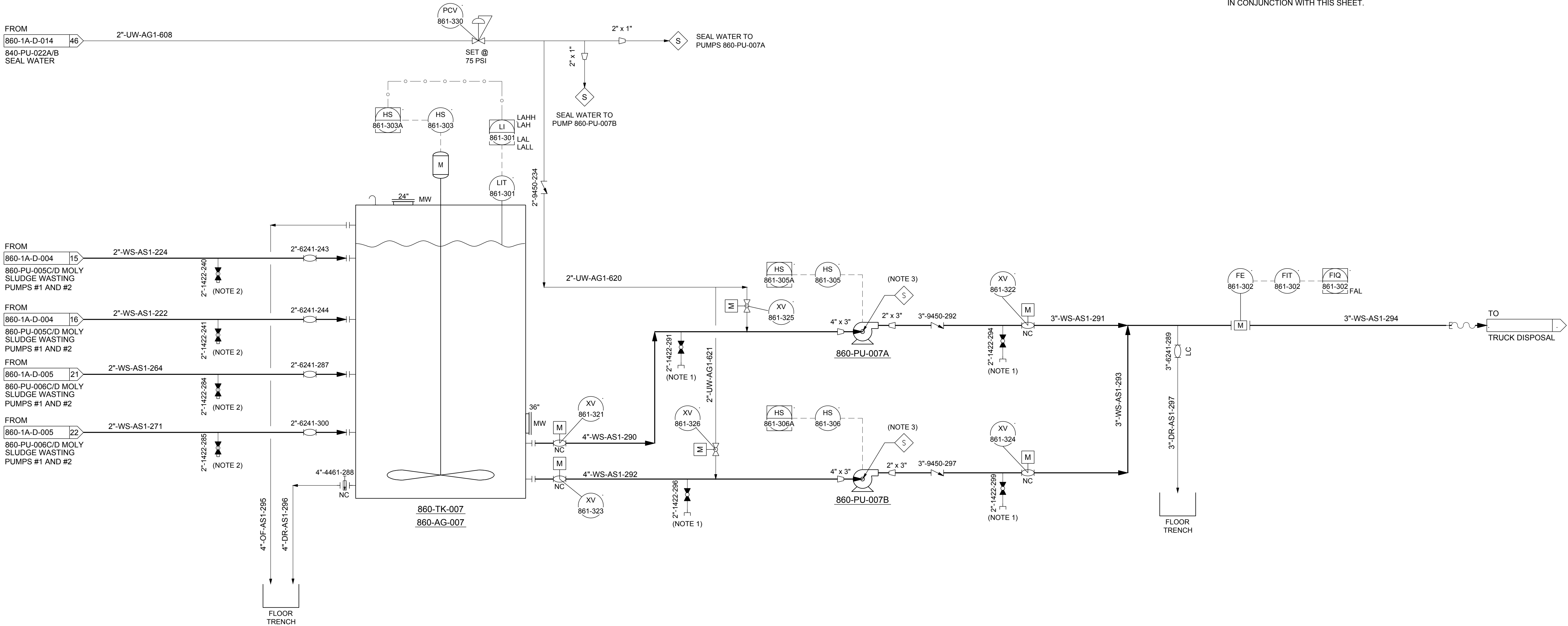
860-TK-007
SERVICE: MOLY SLUDGE TANK
CAPACITY: 34,500 GAL
SIZE: 16' DIA x 25' H
MATERIAL: 304 STAINLESS STEEL

860-AG-007
SERVICE: MOLY SLUDGE TANK AGITATOR
HP: 3
RPM: 1200
MATERIAL: 316 STAINLESS STEEL

860-PU-007A
SERVICE: MOLY SLUDGE TRANSFER PUMP #1
DISCHARGE: 150 GPM @ 25 FT TDH
HP: 5

860-PU-007B
SERVICE: MOLY SLUDGE TRANSFER PUMP #2 (SPARE)
DISCHARGE: 150 GPM @ 25 FT TDH
HP: 5

- NOTES:
1. CONNECTION FOR UTILITY AIR / UTILITY WATER.
 2. VALVES TO BE LOCATED AT END OF THICKENER TUNNEL.
 3. SEE 860-1A-D-014 FOR SEAL WATER DETAIL.
 4. ALL DRAINS (DR) AND OVERFLOWS (OF) REPORT TO MOLY PROCESS BUILDING SUMP VIA FLOOR TRENCH DRAINS
 5. SEE DRAWINGS 800-1A-D-001 THROUGH 800-1A-D-003, PID SYMBOLS AND ABBREVIATIONS, IN CONJUNCTION WITH THIS SHEET.



0	2022-04-05	ISSUED FOR CONSTRUCTION	JCS	EPB	CAB	EPB
REV.	YYYY-MM-DD	DESCRIPTION	PREPARED	DESIGNED	REVIEWED	APPROVED

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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

**PIPING AND INSTRUMENTATION DIAGRAM
MOLY SLUDGE HANDLING SYSTEM**

PROJECT NO.
1912808404

REV.

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DRAWING

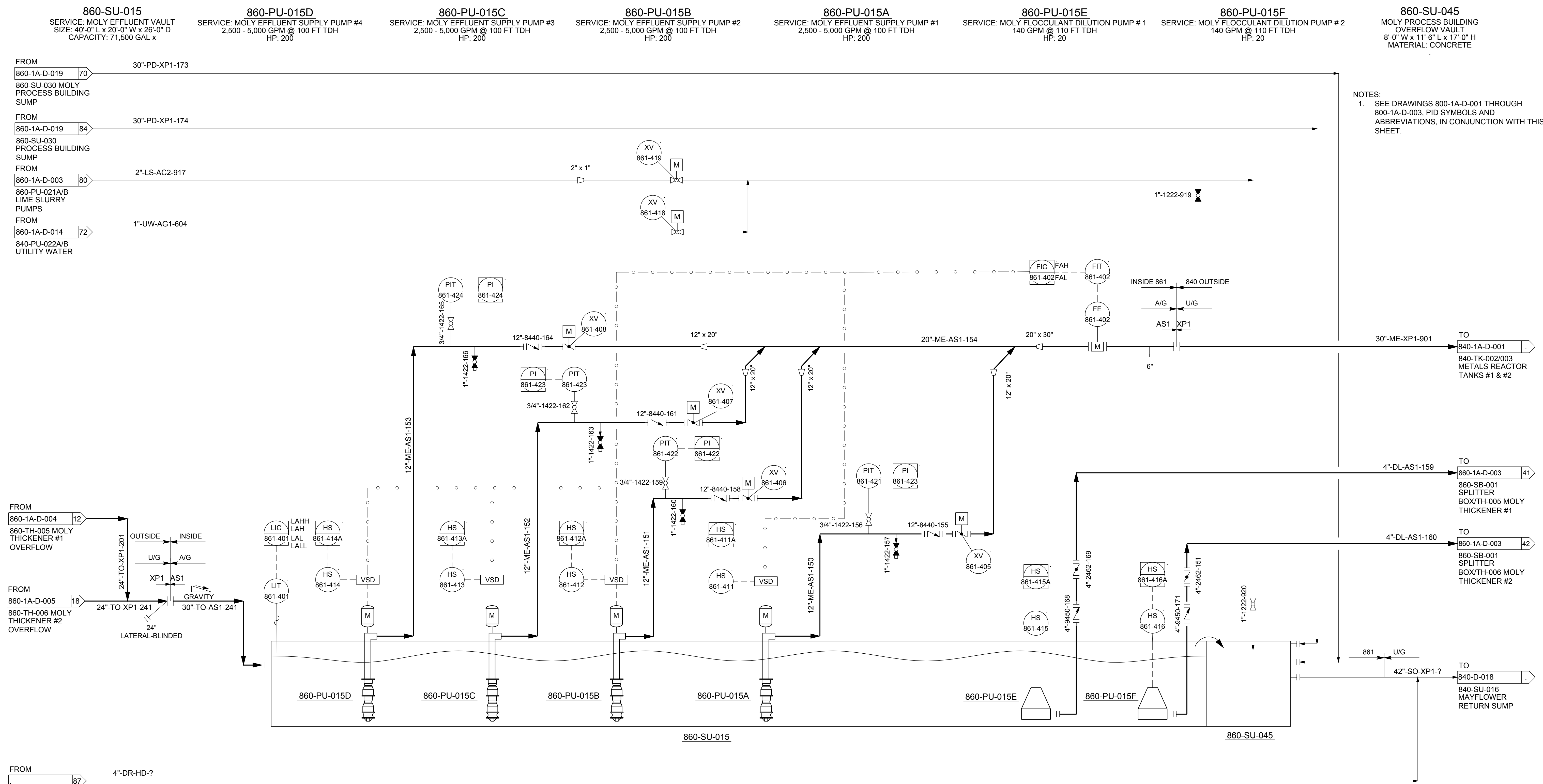
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PLOT DATE: 2022-03-25

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0	2022-04-05	ISSUED FOR CONSTRUCTION	JCS	EPB	CAB	EPB
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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

**PIPING AND INSTRUMENTATION DIAGRAM
MOLY EFFLUENT SYSTEM**

PROJECT NO.

1912808404

REV.

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DRAWING

860-1A-D-012

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI D

860-BN-020
SERVICE: FERRIC SULFATE SYSTEM BIN
CAPACITY: BY VENDOR
14'-0" DIA x 43'-6" H
MATERIAL: 316 STAINLESS STEEL

860-DC-020
SERVICE: FERRIC SULFATE SYSTEM BAGHOUSE
CAPACITY: 250 SQ FT
HP: 1.5

860-CV-020
SERVICE: FERRIC SULFATE SCREW FEEDER
HP: 1.5
RPM: 1750
CAPACITY: 1500-15,000 PPH

860-BL-020B
SERVICE: FERRIC SULFATE
SYSTEM BAGHOUSE EXHAUST FAN
RPM: 3450
HP: 3

860-TK-020
SERVICE: FERRIC SULFATE MIX
TANK
BY VENDOR
SIZE: 5'-0" DIA x 5'-0" H
MATERIAL: 316 STAINLESS STEEL

860-AG-020
SERVICE: FERRIC SULFATE
MIX TANK AGITATOR
BY VENDOR

860-PU-020A
SERVICE: FERRIC SULFATE
TRANSFER PUMP #1
50 GPM @ 75 FT TDH
HP: 10

860-PU-020B
SERVICE: FERRIC SULFATE
TRANSFER PUMP #2
50 GPM @ 75 FT TDH
HP: 10

860-SU-021
SERVICE: FERRIC SULFATE
CONTAINMENT SUMP
SIZE: 15'-0" L x 12'-6" W x 4'-6" D
CAPACITY: 6,570 GALLONS
MATERIAL: CONCRETE

860-TK-021
SERVICE: FERRIC SULFATE STORAGE TANK
SIZE: 10'-0" DIA x 10'-0" H
CAPACITY: 3,800 GAL x

860-AG-021
SERVICE: FERRIC SULFATE
STORAGE TANK AGITATOR
HP: 15

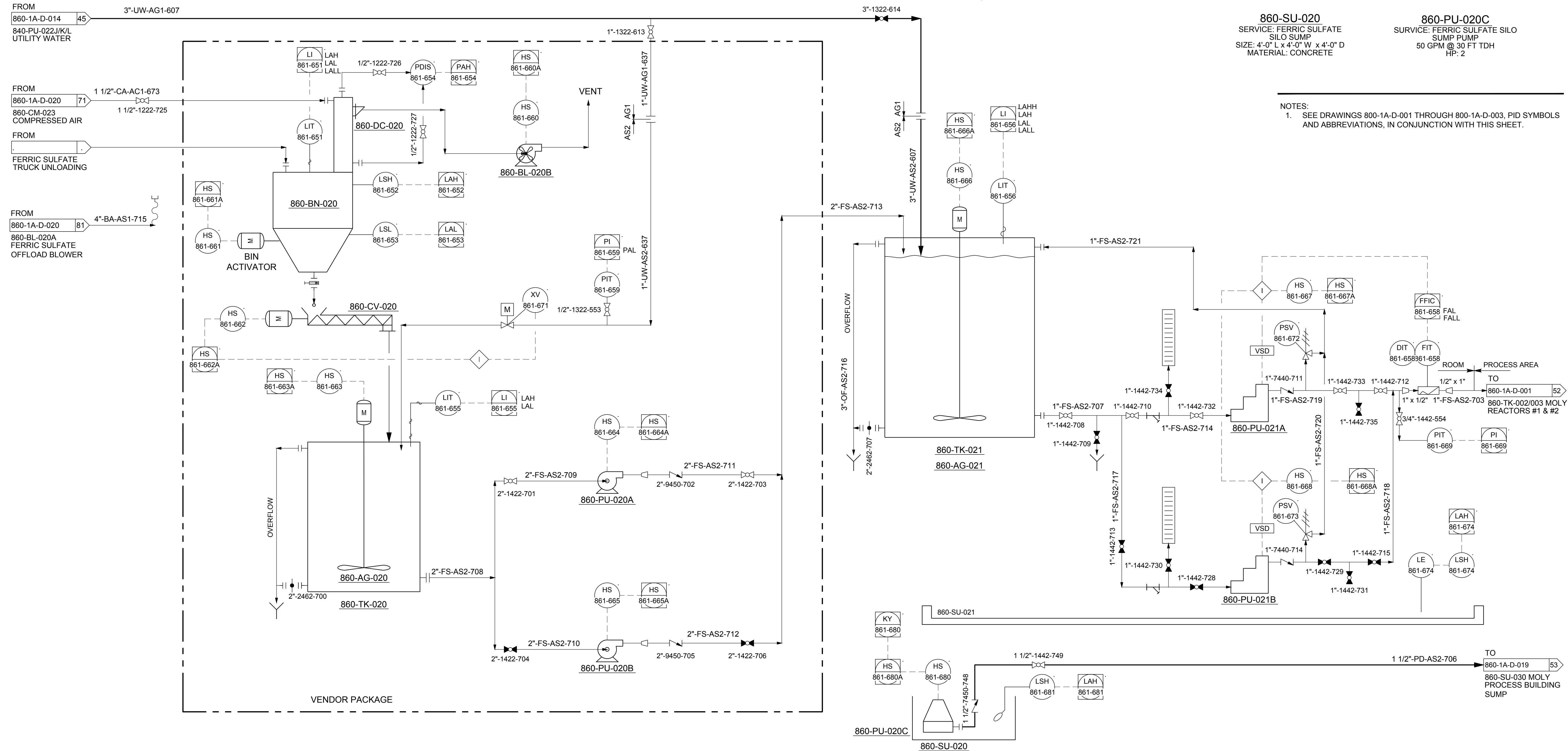
860-SU-020
SERVICE: FERRIC SULFATE
SILO SUMP
SIZE: 4'-0" L x 4'-0" W x 4'-0" D
MATERIAL: CONCRETE

860-PU-021A
SERVICE: FERRIC SULFATE
METERING PUMP #1
HP: 1.5

860-PU-021B
SERVICE: FERRIC SULFATE
METERING PUMP #2
HP: 1.5

860-PU-020C
SURVICE: FERRIC SULFATE SILO
SUMP PUMP
50 GPM @ 30 FT TDH
HP: 2

NOTES:
1. SEE DRAWINGS 800-1A-D-001 THROUGH 800-1A-D-003, PID SYMBOLS AND ABBREVIATIONS, IN CONJUNCTION WITH THIS SHEET.



SEAL



CLIENT

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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

**PIPING AND INSTRUMENTATION DIAGRAM
FERRIC SULFATE SYSTEM**

PROJECT NO.
1912808404

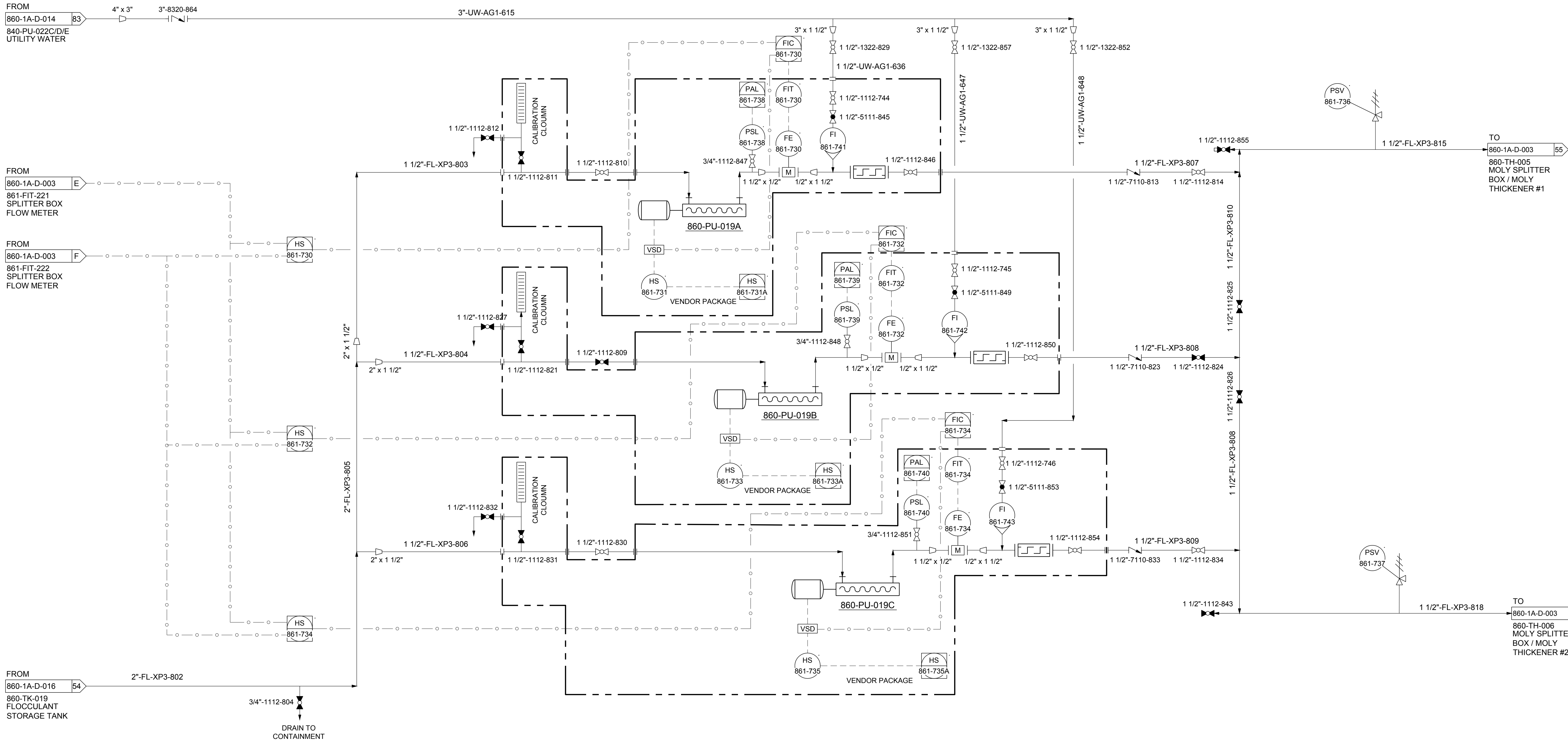
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860-PU-019A
SERVICE: MOLY FLOCCULANT PUMP #1
6 - 35 GPM @ 110 FT TDH

860-PU-019B
SERVICE: MOLY FLOCCULANT PUMP #2 (SPARE)
6 - 35 GPM @ 120 FT TDH

860-PU-019C
SERVICE: MOLY FLOCCULANT PUMP #3
6 - 35 GPM @ 120 FT TDH

- NOTES:
- ALL INSTRUMENT TAGS PRECEDED WITH 86.
 - SEE DRAWINGS 800-1A-D-001 THROUGH 800-1A-D-003, PID SYMBOLS AND ABBREVIATIONS, IN CONJUNCTION WITH THIS SHEET.



SEAL



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PROJECT

CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE

**PIPING AND INSTRUMENTATION DIAGRAM
MOLY FLOCCULANT SYSTEM 2 OF 2**

PROJECT NO.
1912808404

REV. of DRAWING
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PLOT DATE: 2022-04-01

1 in IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM ANSI D

860-SU-030
SERVICE: MOLY PROCESS BUILDING SUMP
SIZE: 14' L x 16' W x 9' H
CAPACITY: 10,000 GAL
MATERIAL: CONCRETE

860-PU-030
SERVICE: MOLY PROCESS BUILDING
SUMP PUMP
DISCHARGE: 100 GPM @ 65 FT TDH
HP: 5

- NOTES:
- SEE DRAWINGS 800-1A-D-001 THROUGH 800-1A-D-003, PID SYMBOLS AND ABBREVIATIONS, IN CONJUNCTION WITH THIS SHEET.
 - 860-PU-030 TO INCLUDE AGITATOR RING.



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PROJECT
CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE
**PIPING AND INSTRUMENTATION DIAGRAM
MOLY PROCESS BUILDING SUMP**

PROJECT NO. 1912808404 REV. 0 of DRAWING 860-1A-D-019

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861-SS-001
SERVICE: MOLY ACID TANK
AREA SAFETY SHOWER

861-SS-002
SERVICE: MOLY MEZZANINE
FERRIC SULFATE SILO
SAFETY SHOWER

861-SS-003
SERVICE: MOLY MEZZANINE
REACTOR TANK SAFETY SHOWER

861-SS-004
SERVICE: MOLY PROCESS BUILDING
SUMP SAFETY SHOWER

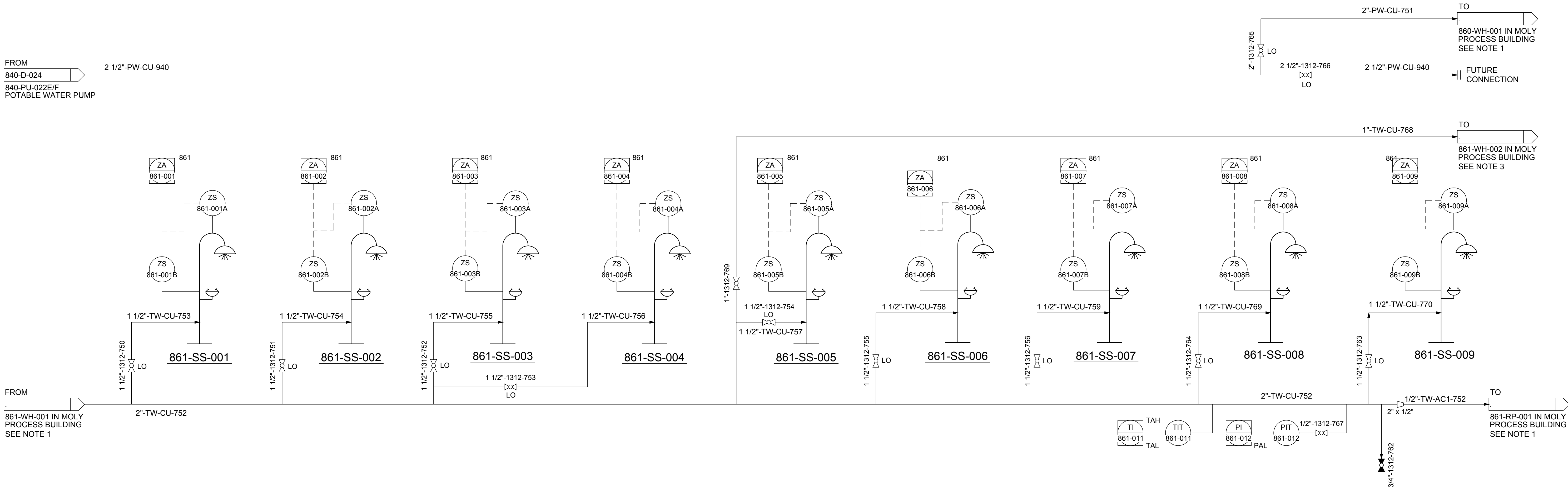
861-SS-005
SERVICE: MOLY NORTH WEST 1ST FLOOR
MOLY FLOCCULANT AREA SAFETY SHOWER

861-SS-006
SERVICE: MOLY NORTH EAST
1ST FLOOR SAFETY SHOWER

861-SS-007
SERVICE: FERRIC SULFATE
TANK ROOM SAFETY SHOWER

861-SS-008
SERVICE: FERRIC SULFATE
BLOWER ROOM SAFETY SHOWER

861-SS-009
SERVICE: SULFURIC ACID
LOADOUT NORTHEAST AREA
INSIDE SAFETY SHOWER



- NOTES:
1. WATER HEATER / RECIRC PUMP IN MOLY PROCESS BUILDING REFER TO DETAIL 1, DWG 861-1A-M-105.
 2. TEMPER WATER UTILITY STATION IN MOLY PROCESS BUILDING REFER TO DETAIL 2, DWG 861-1A-M-105.

0	2022-04-05	ISSUED FOR CONSTRUCTION	JCS	EPB	CAB	EPB
REV.	YYYY-MM-DD	DESCRIPTION	PREPARED	DESIGNED	REVIEWED	APPROVED

SEAL



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PROJECT
CLIMAX MINE
MOLYBDENUM REMOVAL WATER TREATMENT PLANT

TITLE
**PIPING AND INSTRUMENTATION DIAGRAM
SAFETY SHOWERS**

PROJECT NO. 1912808404 REV. 0 of DRAWING 860-1A-D-021